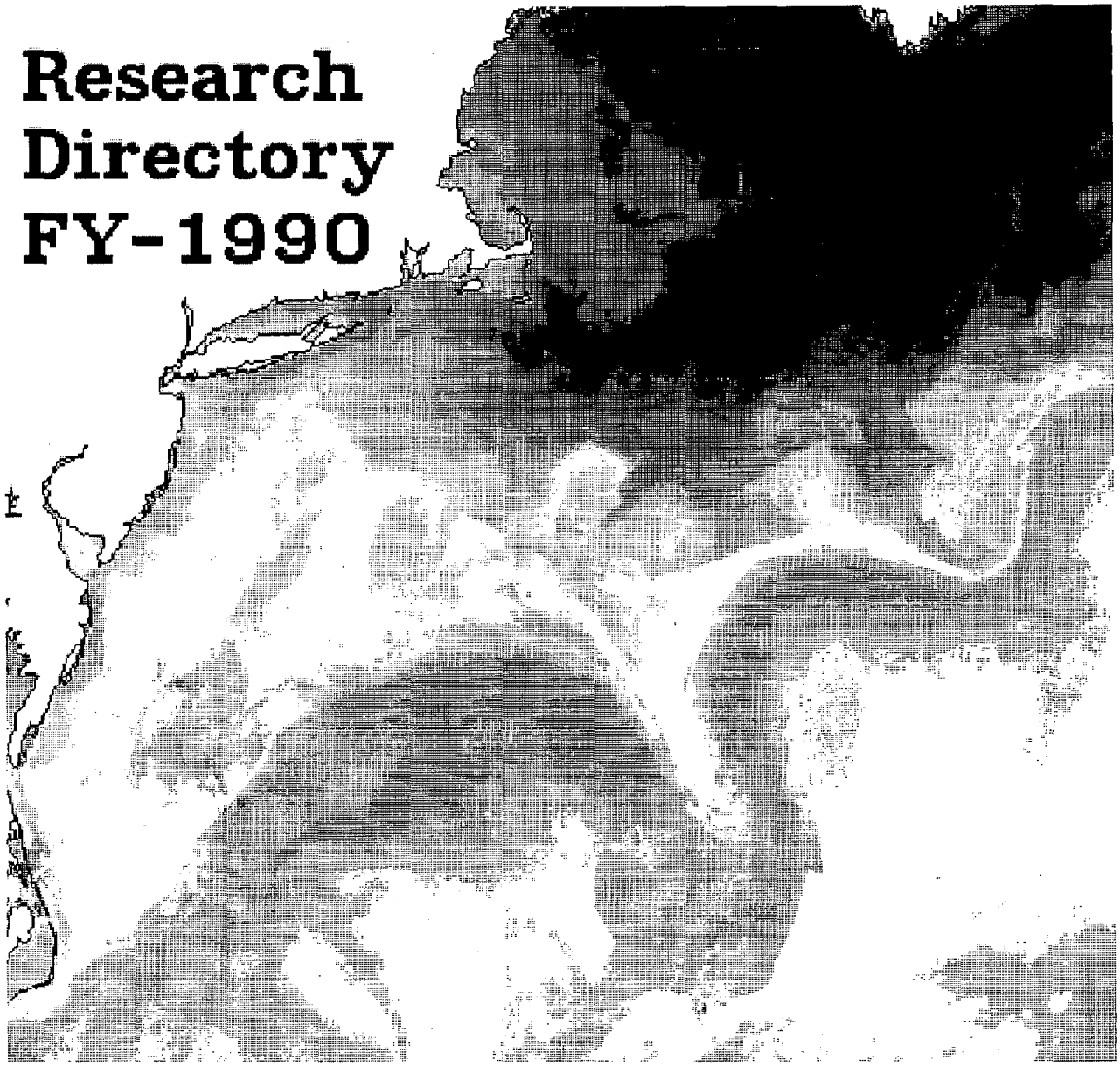
Research Directory FY-1990



NORTHEAST REGIONAL OFFICE
NORTHEAST FISHERIES CENTER

National Marine Fisheries Service
NOAA
U.S. Department of Commerce

APRIL 1990

RESEARCH DIRECTORY

FY - 1990

Northeast Regional Office

Northeast Fisheries Center

National Marine Fisheries Service
NOAA
U.S. Department of Commerce

Research Planning and Coordination Staff
Woods Hole, MA 02543

April 1990

COVER: Satellite image of sea surface temperatures of the waters off the northeast coast of the United States for 30 June - 3 July 1989. Data are from the infrared channels of the Advanced Very High Resolution Radiometer (AVHRR) aboard NOAA-11 polar orbiting satellite.

The image was provided by the Remote Sensing Unit of the Marine Climatology Investigation, Northeast Fisheries Center as part of a cooperative agreement with the Oceanographic Remote Sensing Laboratory, University of Rhode Island.

Table of Contents

Introduction

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The NMFS Mission:

To achieve a continued optimum utilization of living marine resources for the benefit of the nation.

This document summarizes the organization and research activities of the Northeast Region (Northeast Regional Office and Northeast Fisheries Center), National Marine Fisheries Service proposed for FY90.

The National Marine Fisheries Service (NMFS) is part of the National Oceanic and Atmospheric Administration (NOAA) under the Department of Commerce. NMFS promotes the conservation and optimum utilization of the ocean's living resources.

The Northeast Region (NER) is responsible for the NMFS mission in the Northeast. It is the regional contact for state conservation agencies, recreational interests, the fishing industry, other constituencies, and the general public. The Northeast Regional Office (NERO) is responsible for planning, organizing, and implementing fishery management and conservation programs (including regulatory requirements under fishery management plans), habitat conservation, fishery development, recreational fisheries programs, and providing assistance to the industry through the range of NMFS programs.

The Northeast Fisheries Center (NEFC) is the research arm of NMFS in the Northeast. NEFC studies the living marine resources and their habitats in the Northwest Atlantic, from Cape Hatteras through the Gulf of Maine (Fig. 1), and advises on their conservation, management, development, and utilization.

NEFC research activities under the core emphasis attempt to address four questions based on issues of concern to users and managers of marine resources of the region:

- **What are the physical and chemical processes that affect the abundance of living marine resources?**
- **What factors control, limit, and cause variability in abundance, recruitment, and utilization of living marine resources, and how can they be predicted?**
- **What are the effects of pollution and habitat degradation and loss on living marine resources and their utilization?**
- **What are the methods of achieving optimal utilization of living marine resources, given that the system within which they exist is used for a variety of purposes?**

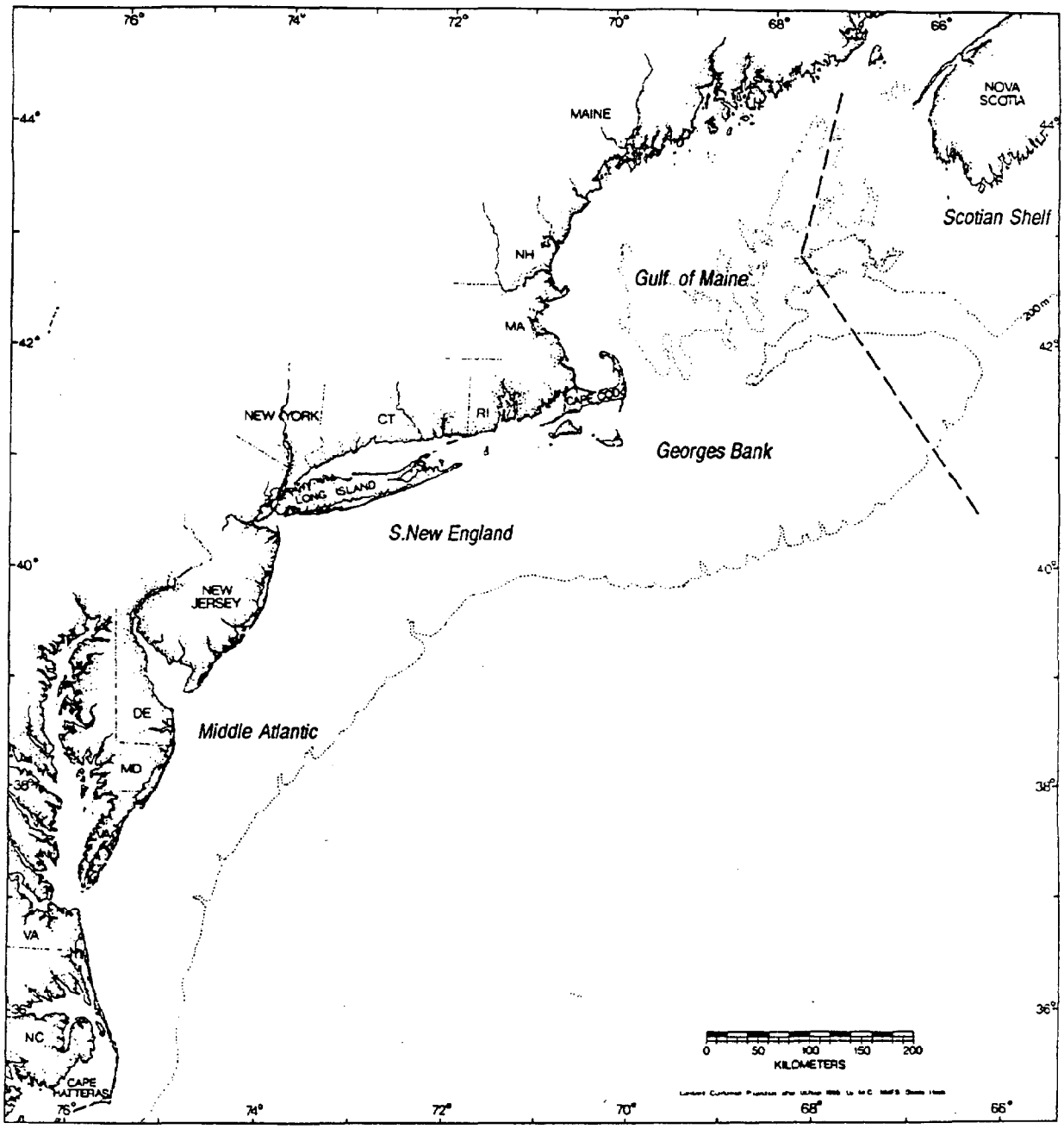
NEFC studies the biomass, species composition, age structure, and environment of fisheries resources to determine effects of natural events and human activities on the resources, and to estimate their production. As stipulated by the Magnuson Fisheries Conservation and Management Act of 1976, the NEFC provides advice on the effects of economic and ecological factors on these production estimates to enable the Regional Fishery Management Councils to determine the optimum yield -- the total catch of fish which should provide the greatest overall benefit to the nation, particularly as a source of recreation and food.

NEFC also investigates ways to improve the safety, quality, and quantity of seafoods; and seeks information on the actual and potential effects of pollutants on fisheries resources through studies on the occurrence of marine contaminants, investigations on the normal and pollution-stressed health of marine organisms, and monitoring of environmental factors such as water movements, temperatures, and dissolved oxygen concentrations.

The core emphasis of NEFC research:

Define the limits to which the habitat and living resources of the Northwest Atlantic can be modified and still assure that the living resource populations can sustain themselves at levels consistent with prevailing fishery management policies and goals

Figure 1. Northeast Fisheries Center resesarch area in the Northwest Atlantic.



NERO Oganization

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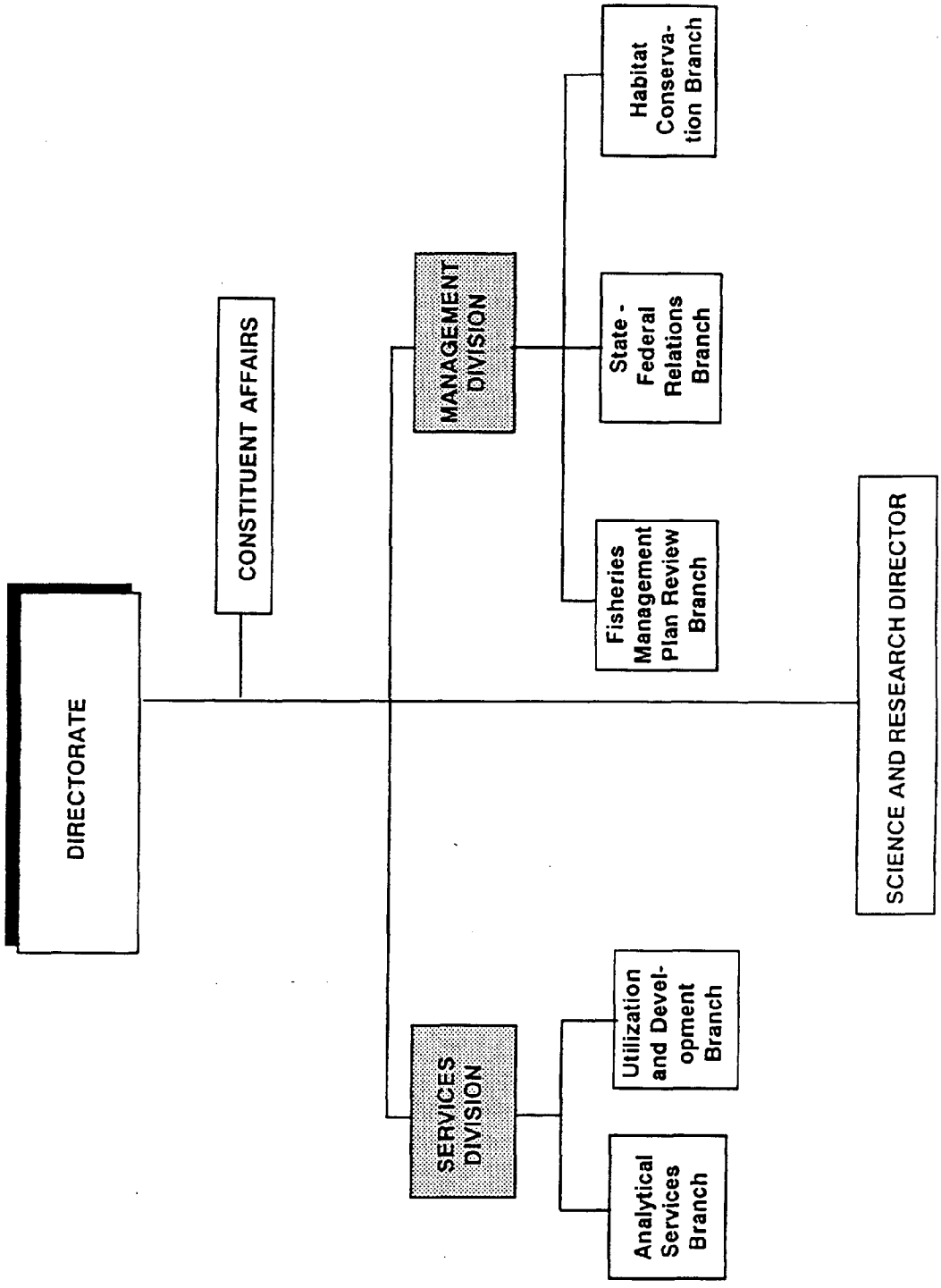
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION--Table of Organization-- 4 / 90



Organizational Directory of the Northeast Regional Office

National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA
01930-2298

Directorate F/NER

Richard B. Roe, Regional Director
(508) 281-9250; FTS 837-9250
Jon C. Rittgers, Deputy Regional Director
(508) 281-9311; FTS 837-9311
Robert Pawlowski, Special Assistant
(508) 281-9221; FTS 837-9221

The Northeast Region serves as the regional representatives of the Assistant Administrator for Fisheries (NOAA) with state conservation agencies, recreational interests, the fishing industry, other constituencies, and the general public. The Region is responsible for planning, organizing, and implementing fishery management and conservation programs (including regulatory requirements under fishery management plans), fishery development, recreational fisheries programs, and providing assistance to the industry throughout the range of NMFS programs.

Office for Constituent Affairs F/NER

New England
Edward J. MacLeod
(508) 281-9260; FTS 837-9260
Mid-Atlantic
Dr. Robert L. Lippson
(301) 226-5771

This office is responsible for communicating with representatives of the harvesters, processors, trade associations, and academia on all matters of importance relating to fisheries management and other services provided by the National Marine Fisheries Service that are of interest to the commercial fisheries in the Northeast. Likewise, it has the responsibility to communicate the concerns and criticisms of the commercial fishing industry to the Regional Director. The office also administers the Conservation Engineering Unit program; advises the Regional Director in areas relating to the financial status of the various segments of the industry; and participates, when requested, on Mid-Atlantic habitat protection special projects.

Conservation Engineering Group F/NER

Alan Blott, Chief
(401) 792-6577; FTS 838-6345

The group provides technical expertise to reduce or resolve a variety of problems relating to fisheries management which require technological assistance; coordinate conservation engineering analysis with both the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council as well as other Federal and state agencies; conducts comparative fishing gear trials via commercial fishing operations; pending the availability of funds, other priority projects requested by the Councils will be considered and pursued.

Additionally, the group conducts spring and fall inshore bottom trawl surveys, and is responsible for the management and operation of the R/V *Gloria Michelle.*

Services Division F/NER5

Kenneth L. Beal, Acting Chief
(508) 281-9267; FTS 837-9267

Administers programs to assist the fishing industry to enhance production and increase efficiency, and to support management goals and regulations. Regional Services Division activities include:

1) analytical and technical services such as economic and policy analyses, federal fisheries permit management and overall computer support;
2) fisheries development designed to increase the market share of domestically produced seafoods, analyses of foreign trade opportunities and related market research; and
3) financial support (S-K grants) for broad areas of fisheries development research, for example, to improve gear, utilize new stocks of fish, conserve juveniles, analyze new products and markets, and assist in programs of consumer education regarding quality and wholesomeness of seafood.

Analytical Services Branch
Stanley D.H. Wang, Chief
(508) 281-9225 FTS 837-9225

Provides analytical, statistical, economic, and policy advice and services to the Regional Director and elements of NMFS. Provides computer programming services including permitting of fishing vessels operating in the Exclusive Economic Zone and data management/computer programming support

Utilization & Development Branch
F/NER53
Paul M. Earl, Chief
(508) 281-9347; FTS 837-9347

Provides trade analyses and services to support National goal of reducing the trade deficit in fishery products. Develops policy analyses and recommendations regarding joint ventures between US fishermen and foreign interests. Currently developing an electronic system for public access to landings, prices, cold storage holdings, trade opportunities, exports and imports for Boston, New York and major ports.

Management Division F/NER7

Richard G. Seamans, Jr., Acting Chief
(508) 281-9244 FTS 837-9244

Administers programs to assist the Regional Fishery Management Councils, the states, the commercial and recreational fishing sectors, and other Federal agencies in the conservation and management of fishery resources. Regional Management Division activities include: 1) technical, administrative, and financial resources; 2) coordination activities between NMFS and other agencies having development responsibility or regulatory authority and to provide comments on proposed projects that could affect marine or anadromous fishery resources or their environments, and to report on the impact of project development.

Plan Review Branch
Peter D. Colosi, Chief
(508) 281-9232 FTS 837-9232

Provides and oversees technical services to the New England and Mid-Atlantic Fishery Management Councils under P.L. 94-265. Operational services include:

1) regional oversight and coordination in the development, implementation, and monitoring of Council Fishery Management Plans; and
2) assistance in the review of those Plans for consistency with national standards and regional policies and procedures. More than fifteen species plans and joint venture/foreign fishing issues constitute current Branch concerns.

State Federal Relations Branch
Harold C. Mears, Chief
(508) 281-9243 FTS 837-9243

Administers Grant-In-Aid Program under which Federal funds are made available to states and other non-Federal interests on a cost sharing basis for carrying out projects designed for the research and development of the commercial fisheries resources (P.L. 88-309); the conservation, development and enhancement of anadromous fishery resources (P.L. 89-304); and the promotion of state activities in support of interjurisdictional fisheries management (Title III of P.L. 99-659). Provides and oversees technical and administrative support to the New England and Mid-Atlantic coastal states under the State-Federal Fishery Management Partnership Program. Provides funding and reviews management plans for interstate coastal marine species. Provides administrative and technical services to the New England and Mid-Atlantic Fishery Management Councils and the Chesapeake Bay Stock Assessment Program.

Habitat Conservation Branch
Thomas E. Bigford, Chief
(508) 281-9209 FTS 837-9209

Coordinates regional responsibilities in habitat management and protected species programs. Habitat efforts concentrate on human impacts to fish habitat, with work split between technical assistance on significant permit applications (wetland fills, coastal hazardous waste sites, hydroelectric projects, dredging plans, etc.) and special efforts on recurring environmental issues (impacts of declining aquatic vegetation beds, "no net loss" of wetlands, etc.). Protected species program contributes regional expertise to national recovery plan efforts for endangered species, coordinates the regional stranding network for beached marine mammals, works with the whale watch naturalists to gain ecological information based on field observations, and comments on proposals with a potential effect on endangered species or any marine mammal.

NEFC Organization

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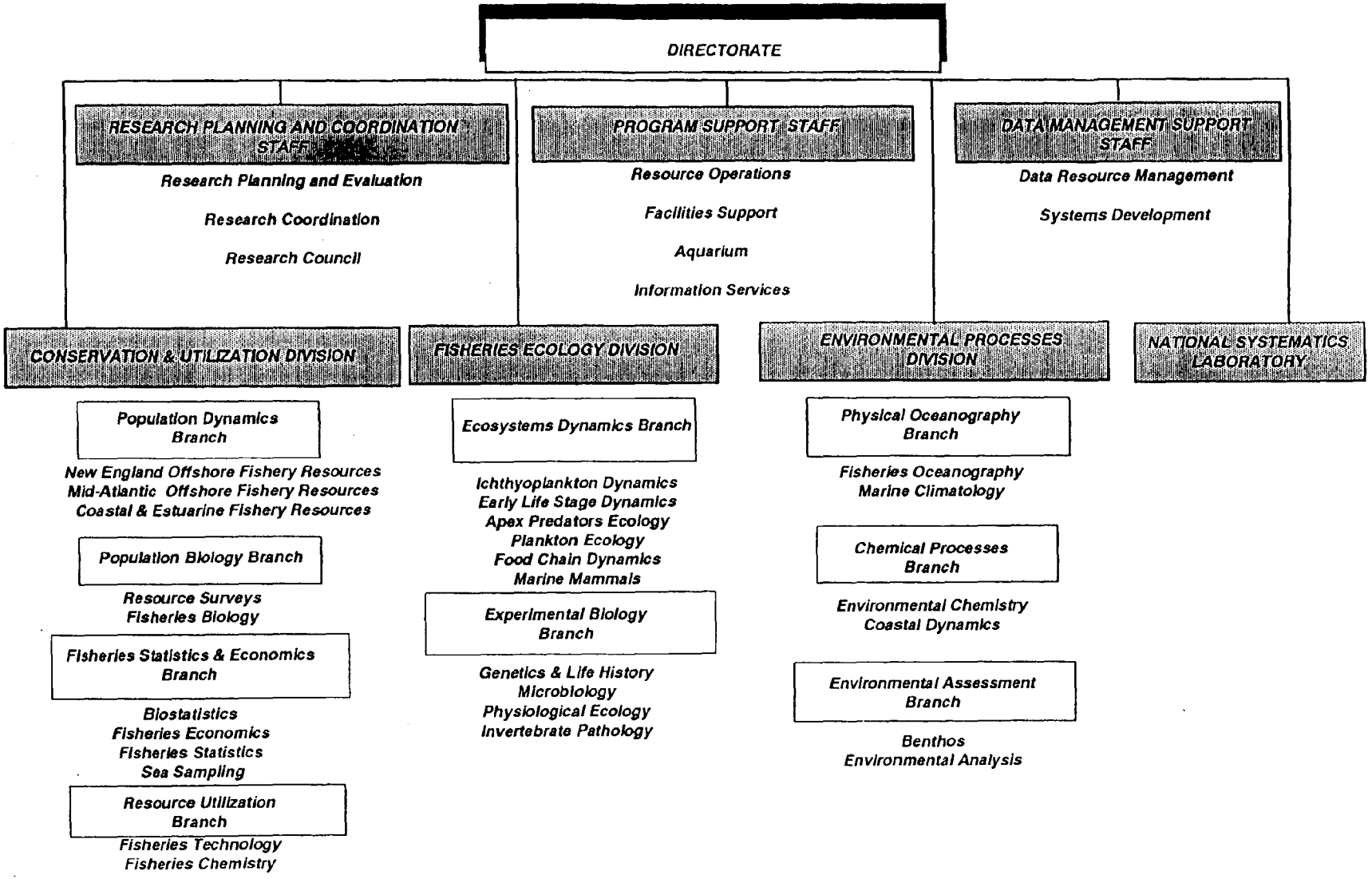
Northeast Fisheries Center -- Table of Organization -- 4/90



Northeast Fisheries Center Mission Statement

Under the National Marine Fisheries Service mission to "achieve a continued optimum utilization of living resources for the benefit of the Nation," it is the responsibility of the Northeast Fisheries Center to plan, develop, and manage multidisciplinary programs of basic and applied research designed to:

- **Better understand** the living marine resources (including marine mammals) of the northwest Atlantic Ocean and the environmental quality essential for their existence and continued productivity;

- **Describe and provide** to management, industry, and the public, options for the utilization and conservation of living marine resources and maintenance of environmental quality which are consistent with national and regional goals and needs, and international commitments.

To fulfill its mission the Center shall:

- **Develop** the scientific basis to determine and provide information on the status of stocks/populations of living marine resources, the status of fisheries for exploited species, the effects of pollution and human alterations on the habitats of the resources, the effects of environmental variability, the quality and safety of fishery products, and the enhancement of anadromous fishery resources;

- **Collect, document, and interpret** scientific and economic data as technical support for management plans, international negotiations, and fishery development programs;

- **Provide** technical advice, review, and monitoring of fishery plans and grant programs;

- **Pursue** fundamental research on specified topics; and

- **Maintain** strong relations with the academic community and industry (through grants, contracts, and cooperative programs as appropriate), and with the users and general public.

The Center shall cooperate with other Fisheries Centers of the National Marine Fisheries Service in the sharing of expertise and in multi-Center programs consistent with national goals and needs and international commitments.

Facilities

Elements and activities of the NEFC Research Program that support the NEFC mission are contained in and carried out at seven laboratories.

Woods Hole Laboratory

Northeast Fisheries Center
National Marine Fisheries Service
Water Street
Woods Hole, MA 02543

Officer-in-Charge: Dr. Marvin Grosslein
(508) 548-5123, x252

The Woods Hole Laboratory is the location of the Center Directorate, Research Planning and Coordination Staff, Data Management Support Staff, Program Support Staff and elements of the research Divisions. The laboratory also houses a combination research-information-education aquarium and is the home port of NOAA research vessels assigned to the Northeast Fisheries Center (R/V *Albatross IV* and R/V *Delaware II*).

The primary thrust of research at the Woods Hole Laboratory is fish population dynamics and stock assessments in support of fisheries management. This research has four major components:

1. resources surveys to monitor abundance,
2. fisheries statistics to monitor removals by fishing,
3. fisheries biology to estimate biological parameters (*e.g.* growth rate) which govern populations, and
4. population parameters (*e.g.* fishing mortality rate) and trends in population size.

Laboratory personnel also conduct research on food chain dynamics of the fish community as a basis for multi-species models, biological and physical oceanographic research on the factors that control production of fish populations, and research in fisheries economics; and develop information on marine mammal populations for determining possible effects of fishing activities.

Gloucester Laboratory

Northeast Fisheries Center
National Marine Fisheries Service
Emerson Avenue
Gloucester, MA 01930

Officer-in-Charge: Robert Learson
(508) 281-3600, x313

The Gloucester Laboratory is the location of the Resource Utilization Branch of the Conservation and Utilization Division. Two major Investigations of the Branch, Fisheries Chemistry and Fisheries Technology, engage in research and technology transfer in support of the mission to optimize the use of the living marine resources of the Northeastern U.S.

Research at the Gloucester Laboratory includes:

1. the development of species identification methodology based on biochemical (isoelectric focusing) and immunological (monoclonal antibodies) techniques, and detection and measurement of naturally occurring marine biotoxins;
2. studies on effects of handling, storage, and processing on the quality, safety, and nutritional value of seafoods, and the development of nutritional data on fresh and processed seafoods especially relative to sterols and Omega-3 fatty acids; and
3. baseline studies of polychlorinated biphyenyls and petroleum hydrocarbon residues in selected tissues of targeted fish and shellfish species.

Laboratory personnel also investigate the application of technological advances to the quality assurance of fresh and frozen seafoods, study the reduction of processing waste and how to improve the efficiency and productivity of seafood processing, and characterize native species based on sensory characteristics such as flavor and texture.

Narragansett Laboratory
Northeast Fisheries Center
National Marine Fisheries Service
28 Tarzwell Drive
Narragansett, RI 02882-1199

Officer-in-Charge: Dr. Kenneth Sherman
(401) 782-3210

The research emphasis at the Narragansett Laboratory is on large marine ecosystem studies to provide improved scientific bases for the management of living marine fisheries resources within the Northeast Continental Shelf ecosystem. The laboratory is the location of elements of the Fisheries Ecology and Environmental Processes Divisions.

Research at the Narragansett Laboratory is focused on environmental processes and fisheries ecology with investigations in marine climatology, early life stage dynamics, plankton ecology, and apex predators ecology. Primary activities are:

1. quantitative research on the physical and biological mechanisms affecting recruitment processes of major pelagic and demersal fish;
2. biological studies of migratory apex predators, especially sharks; and
3. analysis of long term records of meteorological and oceanographic conditions to determine their influence on fisheries and on pollution impacts.

For the last ten years, Narragansett Laboratory personnel have worked closely with the Oceanographic Remote Sensing Laboratory, University of Rhode Island in the development of satellite remote sensing applications for fisheries.

Milford Laboratory
Northeast Fisheries Center
National Marine Fisheries Service
212 Rogers Avenue
Milford, CT 06460

Officer-in-Charge: Dr. Anthony Calabrese
(203) 783-4240

The Milford Laboratory is the location of all but one element of the Experimental Biology Branch, Fisheries Ecology Division, and home port of a 50-foot research vessel, R/V *Shang Wheeler*. Laboratory scientists study the interactions of biological factors and natural variables or man-made stresses on various marine resource species. The four elements that dominate these studies are growth, normal life functions (physiology, immunology, biochemistry, life history), disease, and genetics. Research at the Milford Laboratory includes:

1. studies of nutrition (focused on phytoplankton), and interactions of nutrition, temperature, pollutants, predation, and population density as determining factors in the recruitment and productivity of mollusks;
2. field and laboratory studies of the effects of water quality on physiological and biochemical functions in key marine organisms;
3. disease studies that seek to identify the kinds of diseases and their causes, monitor their occurrence and prevalence, and determine their severity in limiting the distribution, abundance, and productivity of marine resource species; and
4. genetic studies that seek to understand how the genetic composition of marine populations affects each population's ability to cope with environmental factors.

Sandy Hook Laboratory
Northeast Fisheries Center
National Marine Fisheries Service
Highlands, NJ 07732

Officer-in-Charge: Anne Studholme
(201) 872-3001

The broad research emphasis of the Sandy Hook Laboratory is to study those aspects of the marine environment which contribute to the conservation and management of marine finfish and shellfish. The laboratory is the location of elements of the Environmental Processes and Fisheries Ecology Divisions and home port of a small research vessel, R/V *Kyma*.

Environmental assessment research at the Sandy Hook Laboratory is focused on determining the impact of man-induced change on the abundance and distribution of marine organisms and includes:

1. surveying and analyzing food chain dynamics, and zoogeographic distribution of phytoplankton and benthos;
2. determining the distribution of nutrients and toxins; and
3. studying the effects of environmental factors, both natural and man-made, on the behavior of marine species.

Ecosystem research includes studies on the inter- and intra-specific associations affecting actual and potential production of marine species, ranging from the Gulf of Maine and Georges Bank to the Mid-Atlantic.

Studies are also conducted on the trophic exchange among benthos, plankton, and nekton with reference to circulation dynamics. A current study is a multidisciplinary effort involving physical, chemical, and biological observations to determine changes in a near-shore sewage sludge dumpsite following cessation of dumping.

Laboratory personnel also characterize the annual status and changes in ichthyoplankton, track decadal changes in the community structure of coastal fishes, and estimate total finfish biomass in areas of the Northeast Continental Shelf ecosystem.

Oxford Laboratory
Northeast Fisheries Center
National Marine Fisheries Service
Railroad Avenue
Oxford, MD 21654

Contact: Frederick Kern
(301) 226-5193

The Oxford Laboratory is the location of the Invertebrate Pathology Investigation of the Experimental Biology Branch which is under the Fisheries Ecology Division. The laboratory studies disease agents (both infectious organisms and non-infectious contaminants that affect molluscan and crustacean shellfish species. Oxford Laboratory scientists seek

1. to understand the role of marine animal diseases in resource distribution, abundance, and marketability;
2. to determine the influence of natural and man-made environmental factors on the occurrence and persistence of those diseases; and
3. to explore the use of marine animal health as an indicator of environmental degradation.

To that end, many of the laboratory's major research activities are related to the five year cooperative agreement with the Maryland Department of Natural Resources.

National Systematics Laboratory
Northeast Fisheries Center
National Marine Fisheries Service
National Museum of Natural History
10th & Constitution Avenue, NW
Washington, DC 20560

Officer-in-Charge: Dr. Bruce Collette
(202) 357-2552

The National Systematics Laboratory conducts taxonomic research on fishes, squids, and crustaceans for the National Marine Fisheries Service, as a whole. It sets the foundation for species identification so that fishery managers, port agents, ecologists, and others can determine the identity of species that are harvested or are important components of the ecosystem.

Organizational Directory
Northeast Fisheries Center

To address its mission effectively, Northeast Fisheries Center organization includes a directorate, three support staffs, and four research divisions.

DIRECTORATE

Science and Research Director
ALLEN E. PETERSON, JR.
Woods Hole
(508) 548-5123, x233, FTS 840-1233

Deputy Director
Dr. JOHN B. PEARCE
Woods Hole
(508) 548-5123, x261, FTS 840-1261

Special Assistant
ARTHUR NEILL
Woods Hole
(508) 548-5123, x350, FTS 840-1350

Director UMass/NOAA Cooperative Marine Education and Research Program
Dr. JOHN BOREMAN
Amherst, (413) 545-2842

Director URI/NOAA Cooperative Marine Education and Research Program
Dr. GARRY MAYER
Narragansett, (401) 792-6671

RESEARCH PLANNING AND COORDINATION STAFF (F/NECx1)

Provides for a planning, evaluation, and coordination process that addresses internal and external integration of the NEFC Research Program.

Chief - Dr. MICHAEL P. SISSENWINE
Woods Hole
(508) 548-5123, x239, FTS 840-1239

Research Council
Executive Secretary - JAMES HUGHES (ACTING)
Milford
(203)783-4220, FTS 642-5220

Research Planning and Evaluation Section
Chief - Dr. AMBROSE JEARLD
Woods Hole
(508) 548-5123, x318, FTS 840-1318

Research Coordination Section
Chief - H. C. BOYAR (ACTING)
Woods Hole
(508) 548-5123, X235, FTS 840-1235

Fishery Management Councils
Liaison - Dr. BRUCE HIGGINS (ACTING)
Woods Hole, (508) 548-5123, X340

Marine Recreational Fisheries
Liaison - THOMAS MORRISSEY
Woods Hole
(508) 548-5123,x236,FTS 840-1236

Vessel Operations
North Atlantic Fisheries Organization (NAFO)
Coordinator - H. C. BOYAR
Woods Hole
(508) 548-5123,x235,FTS 840-1235

Habitat Conservation
Regional Action Plan (RAP)
Coordinator - Dr. BRUCE E. HIGGINS
Woods Hole
(508) 548-5123,x340,FTS 840-1340

Program Reviews
Special Projects
Northeast Area Remote Sensing System (NEARSS) Association
Sea Grant
International Council for the Exploration of the Sea (ICES)
Coordinator - HELEN MUSTAFA
Woods Hole
(508) 548-5123,x244,FTS 840-1244

Aquaculture
Coordinator - Dr. JAMES E. HANKS
Milford
(203) 783-4200,x240,FTS 642-5240

PROGRAM SUPPORT STAFF (F/NECx2)

Provides scientific, technical, and administrative services needed to carry out the NEFC Research Program.

Chief - MARY G. LAIRD
Woods Hole
(508) 548-5123, x200, FTS 840-1200

Facilities Support
Chief - DANIEL O'BRIEN
Woods Hole
(508) 548-5123, x219, FTS 840-1219

Aquarium
Chief - FRED NICHY
Woods Hole
(508) 548-5123, x267, FTS 840-1267

Information Services
Chief - TERI FRADY
Woods Hole
(508) 548-5123, x329, FTS 840-1378

Resource Operations
Chief - VACANT
Woods Hole

DATA MANAGEMENT SUPPORT STAFF (F/NECx3)

Provides professional support to NEFC staff in the development, maintenance, and use of automated information technologies and techniques.

Chief - DR. EUGENE HEYERDAHL (Regional Data Base Administrator)
Woods Hole
(508) 548-5123, x242, FTS 840-1242

Data Resource Management
Chief - MARY WILLARD
Woods Hole, (508) 548-5123, x299, FTS 840-1299

Systems Development
Chief - VACANT
Woods Hole

ENVIRONMENTAL PROCESSES DIVISION (F/NEC3)

Analyzes and describes the physical, chemical, and biological environment of fishery resources, how the environment varies and how it is affected by anthropogenic activity.

Chief - Dr. ROBERT A. MURCHELANO
Woods Hole
(508) 548-5123, x263, FTS 840-1263

Physical Oceanography Branch
Chief - Dr. MERTON C. INGHAM
Narragansett, (401) 782-3310, FTS 838-6310

Marine Climatology Investigation
Chief - REED ARMSTRONG
Narragansett, (401) 782-3280, FTS 838-6280

Fisheries Oceanography Investigation
Chief - Dr. DAVID MOUNTAIN
Woods Hole, (508) 548-5123, x271, FTS 840-1271

Chemical Processes Branch
Chief - JOHN E. O'REILLY
Sandy Hook
(201) 872-3000, x205, FTS 342-8205

Environmental Chemistry Investigation
Chief - ANDREW DRAXLER
Sandy Hook, (201) 872-3000, x254, FTS 342-8254

Coastal Dynamics Investigation
Chief - Dr. WILLIAM PHOEL
Sandy Hook, (201) 872-3000, x215, FTS 342-8215

Environmental Assessment Branch
Chief - ANNE STUDHOLME
Sandy Hook
(201) 872-3000, x208, FTS 342-8208

Benthos Investigation
Chief - ROBERT REID
Sandy Hook, (201) 872-3000, x220, FTS 342-8220

Environmental Analysis Investigation
Chief - STUART WILK
Sandy Hook, (201) 872-3000, x201,FTS 342-8201

FISHERIES ECOLOGY DIVISION (F/NEC2)

Focuses on the ecological basis of fishery resource productivity and the responses in terms of predation, competition, diseases, mortality or survival, recruitment, and growth of important species and ecosystem groups to natural variables and anthropogenic activities.

Chief - Dr. ROBERT MURCHELANO (ACTING)
Woods Hole
(508) 548-5123, x263, FTS 840-1263

Ecosystem Dynamics Branch
Chief - Dr. KENNETH SHERMAN
Narragansett
(401) 782-3210, FTS 838-6210

Early Life Stage Dynamics Investigation
Chief - Dr. GEOFFREY LAURENCE
Narragansett
(401) 782-3350, FTS 838-6350

Ichthyoplankton Assessment Investigation
Chief - WALLACE SMITH
Sandy Hook, (201) 872-0200, x260, FTS 342-8260

Plankton Ecology Investigation
Chief - JOHN R. GREEN
Narragansett, (401) 782-3240, FTS 838-6240

Apex Predators Investigation
Chief - JOHN G. CASEY
Narragansett, (401) 782-3320, FTS 838-6320

Food Chain Dynamics Investigation
Chief - Dr. MARVIN GROSSLEIN
Woods Hole, (508) 548-5123, x252, FTS 840-1252

Marine Mammals Investigation
Chief - Dr. TIM SMITH
Woods Hole, (508) 548-5123, x251, FTS 840-1251

Experimental Biology Branch
Chief - Dr. ANTHONY CALABRESE
Milford, (203) 783-4250, FTS 642-5240

Genetics and Life History Investigation
Chief - Dr. ARLENE LONGWELL
Milford, (203) 783-4207, FTS 642-5207

Microbiology Investigation
Chief - Dr. RICHARD ROBOHM
Milford, (203) 783-4237, FTS 642-5237

Physiological Ecology Investigation
Chief - Dr. FREDERICK THURBERG
Milford, (203) 783-4244, FTS 642-5244

Invertebrate Pathology Investigation
Chief - FREDERICK G. KERN
Oxford, (301) 226-5193

CONSERVATION AND UTILIZATION DIVISION (F/NEC1)

Develops and provides information on the status of the fisheries and fishery resources, and their potential and future outlook relative to fishing, habitat, fish quality, and economics.

Chief - Dr. VAUGHN C. ANTHONY
Woods Hole
(508) 548-5123, x304, FTS 840-1304

Population Biology Branch
Chief - Dr. STEPHEN H. CLARK
Woods Hole
(508) 548-5123, x312, FTS 840-1312

Resource Surveys Investigation
Chief - THOMAS AZAROVITZ
Woods Hole
(508) 548-5123, x283, FTS 840-1283

Fisheries Biology Investigation
Chief - FRANK ALMEIDA
Woods Hole
(508) 548-5123, x308, FTS 840-1308

Fishery Statistics and Economics Branch
Chief - DARRYL CHRISTENSEN
Woods Hole
(508) 548-5123, x351, FTS 840-1351

Fishery Statistics Investigation
Chief - RONNEE SCHULTZ
Woods Hole
(508) 548-5123, x264, FTS 840-1264

Biostatistics Investigation
Chief - JOAN PALMER
Woods Hole
(508) 548-5123, x247, FTS 840-1247

Foreign and Domestic Sea Sampling Investigation
Chief - PATRICIA GERRIOR
Woods Hole
(508) 548-5123, x291, FTS 840-1291

Fishery Economics Investigation
Chief - Dr. PHILIP LOGAN
Woods Hole
(508) 548-5123, x354, FTS 840-1354

Population Dynamics Branch
Chief - VACANT
Woods Hole

New England Offshore Fishery Resources Investigation
Chief - Dr. FREDRIC SERCHUK
Woods Hole, (508) 548-5123, x245, FTS 840-1245

Mid-Atlantic Offshore Fishery Resources Investigation
Chief - Dr. STEVEN MURAWSKI
Woods Hole, (508) 548-5123, x303, FTS 840-1303

Coastal/Estuarine Fishery Resources Investigation
Chief - Dr. WENDY GABRIEL
Woods Hole, (508) 548-5123, x213, FTS 840-1213

Emergency Striped Bass Research Study
Contact - Dr. ANNE RICHARDS
Woods Hole,
508) 548-5123, x 357, FTS 840-1357

Resource Utilization Branch
Chief - ROBERT LEARSON
Gloucester
(508) 281-3600, x313, FTS 837-9313

Fisheries Technology Investigation
Chief - BURTON L. TINKER
Gloucester, (508) 281-3600, x217, FTS 837-9217

Fisheries Chemistry Investigation
Chief - Dr. JOSEPH J. LICCIARDELLO
Gloucester, (508) 281-3600, x236, FTS 837-9236

NATIONAL SYSTEMATICS LABORATORY (F/NEC4)

Sets the foundation for species identification so that fishery managers, port agents, ecologists, and others can determine the identity of species that are harvested or are important components of the ecosystem.

Laboratory Director - Dr. BRUCE B. COLLETTE
National Museum of Natural History
Washington, (202) 357-2524, FTS 357-2524

Taxonomy of Squids
Dr. MICHAEL VECCHIONE

Taxonomy of Fishes
Dr. THOMAS MONROE

Taxonomy of Crustaceans
Dr. AUSTIN B. WILLIAMS

FY90 Activities and Products of the Northeast Fisheries Center

Research Planning, Evaluation, and Coordination

CONTACT: Michael Sissenwine NEC, Woods Hole

OBJECTIVE

Provide for a planning, evaluation, and coordination process which addresses internal and external integration of the NEFC research program for reporting purposes; establish and monitor communication linkages with all users of NEFC information; work closely with the users to assure that their information needs are communicated and understood; work closely with Northeast Region staff and Northeast Center scientists to assure that research products address user needs; and identify studies at various institutions that have the potential to augment NEFC research, and coordinate the integration of these efforts into the NEFC research program.

ANTICIPATED ACTIVITIES IN FY90

1. Represent NEFC interests in the NOAA/NMFS budget formulation and management system.
2. Manage the NEFC planning, evaluation, and reporting system.
3. Facilitate the development of Current Year Operating Plans (CYOP) and future program/budget initiatives.
4. Plan and coordinate a Center program preview/review.
5. Develop an interactive data base containing NEFC research planning and output.
6. Develop a framework for evaluating the Center research program.
7. Implement an automated CYOP generating and reporting system.
8. Coordinate the implementation of the Northeast Ecosystem Monitoring Program.
9. Review NMFS Headquarters/Regional planning documents and research/management activities.
10. Organize and document three peer program reviews of the NEFC research program.
11. Maintain coordination and/or liaison between the Center and the "outside" in the following program areas: inshore and habitat research, aquaculture, Sea Grant, marine recreational fisheries, Fishery Management Councils, vessel operations, remote sensing, special projects, and intergovernmental affairs.

ANTICIPATED PRODUCTS IN FY90

1. Current Year Operating Plans.
2. Quarterly Research Reports.
3. Automated quarterly progress reporting system.
4. NEFC Research Emphasis Document.
5. Program Evaluation Report for the Science and Research Director.
6. Draft procedure for peer program reviews.
7. Documentation of Population Dynamics Branch, Information Services, and Experimental Biology Branch peer reviews with recommendations for the implementation of Review Panel Reports.
8. Research Council evaluation reports on research planning and technology.
9. Reports and other documentation in the areas of coordination.
10. Northeast Marine Recreational Fishery Program Development Plan.
11. Cruise schedules.
12. Center research report to the North Atlantic Fisheries Organization.
13. *Linkages*, monthly notes of the Research Planning and Coordination Staff.
14. Northeast Regional Research Directory for FY-90.

Program Support Staff

Information Management and Transfer

CONTACT: Mary Laird — NEC, Woods Hole

OBJECTIVE

Provide NEFC staff with published scientific and technical literature needed to design research projects and analyze research findings. Maintain a research aquarium, and assist with aquarium-based research. Provide NEFC staff with technical writing and editing assistance needed to publish research findings. Coordinate the publication process from manuscript through distribution. Provide scientific, technical, and public constituents of the NEFC with data, information, reports, and publications reflecting research carried out at the NEFC.

ANTICIPATED ACTIVITIES IN FY90

1. Operate NEFC libraries and information services as technical information clearing-houses for constituents.
2. Operate the NEFC aquarium as an information, education, and extension center for constituents; and maintain it for research purposes.
3. Assist in live animal research under controlled conditions of the aquarium.
4. Provide technical review and editing of scientific manuscripts.
5. Manage the publication process for all NEFC published documents.
6. Develop information products for constituents, including news media.

ANTICIPATED PRODUCTS FOR FY90

1. Edited and published NOAA Technical Memorandum series.
2. Edited and published Monthly Highlights.
3. Edited and published NEC End-of-Year Report.
4. Compiled, edited, and published annual list of NEFC publications.
5. Wrote, published, distributed NEC news releases.

Data Management Support

CONTACT: Eugene Heyerdahl — NEC, Woods Hole

OBJECTIVE

Provide professional support to NEFC staff in the development, maintenance, and use of automated information technologies and techniques.

ANTICIPATED ACTIVITIES IN FY90

1. Convert and develop NE Marine Fisheries Information System Time Series Data.
2. Upgrade NEC Bottom Trawl Survey Data Building System.
3. Prepare and execute NMFS IT-95 RFP for top end computers.
4. Continue NE regional user consulting/systems development and maintenance support.
5. Continue NE regional data transcription/computer time sharing management support.
6. Analyze and document regionwide relational data base requirements.

ANTICIPATED PRODUCTS IN FY90

1. Quarterly summary reports of the NE Marine Fisheries Information System.
2. Completed NE Marine Fisheries Information System Age Length System.
3. Modifications for the Sea Sampling Data Building Systems.
4. Revised NEC Bottom Trawl Survey Data Building System.
5. Documentation of the Northeast Regional Security Plan.
6. Documentation of NEC Financial Reporting System.
7. Operational systems for NE Regional taxonomic table, hydrographic data base, and data/dictionary.
8. Evaluation of requirements for Geographic Information System workstation.

Environmental Processes Division
Physical Oceanography Branch

Marine Climatology Investigation

CONTACT: Reed Armstrong NEC, Narragansett

OBJECTIVE

Acquire and analyze decade, and longer, time-series records of meteorological and oceanographic conditions that influence the fisheries and pollution effects off the Northeastern U.S.

ANTICIPATED ACTIVITIES IN FY90

1. Establish and maintain long-term records of selected climatological data sets.

2. In collaboration with FED, monitor monthly the temperature structure and plankton from ships of opportunity (SOOP) in New York Bight and Gulf of Maine; conduct analyses comparing plankton and oceanographic conditions, and current conditions with historic means of water column temperature; and prepare a draft report on plankton ecology.

3. Prepare routine analyses of ocean conditions and sea surface temperature from satellite data.

4. Continue the development of applications of satellite remote sensing data.

5. As part of EPD/FED cooperative initiative, conduct analyses using satellite data toward modeling of stratification on Georges Bank.

ANTICIPATED PRODUCTS IN FY90

1. Draft annual report on environmental conditions in the Northwest Atlantic for the North Atlantic Fisheries Organization (NAFO).

2. EPD/CUD draft report on environmental variability in relation to yellowtail flounder abundance.

3. EPD/FED model of yellowtail flounder abundance in relation to climatological conditions.

4. Draft annual report on receiving water masses and introduction of sludge onto the shelf from dumping at Deep Water Dumpsite (DWD) 106.

5. EPD/FED draft reports on shark longline catches and water mass distribution from satellite data; and water temperatures and shark longline catches.

6. Data base of historic means and anomalies of water column temperatures from SOOP in New York Bight.

7. EPD/CUD draft report on 1987 tuna sport fishing catches in relation to water mass distribution from satellite data.

Environmental Processes Division
Chemical Processes Branch

Fisheries Oceanography Investigation

CONTACT: David Mountain NEC, Woods Hole

OBJECTIVE

Measure physical oceanographic conditions on the continental Shelf, and through cooperation with other investigations, determine the influence of physical oceanographic conditions on variations in the fates, trajectories, and effects of pollutants in coastal and off-shore waters, and on biological productivity through effects on larval survival and fish stock recruitment.

ANTICIPATED ACTIVITIES IN FY90

1. Process XBT data from survey cruises and produce horizontal contour maps of the data.
2. Test prototype of moored monitoring system.

ANTICIPATED PRODUCTS IN FY90

1. Report on the third year of hydrographic data collected during the 12-Mile Dumpsite Study.
2. Processed current meter data from the second year of the 12-Mile Dumpsite Study.
3. Report on current meter measurements from the first year of the 12-Mile Dumpsite Study.
4. Final report on hydrographic conditions during the 12-Mile Dumpsite Study.
5. Draft report on shelf water volume variability, 1977-1987.
6. Evaluation of CTD system for use on towed nets.
7. Draft report on anomalous oceanographic conditions during 1987.

Environmental Processes Division
Chemical Processes Branch

Environmental Chemistry Investigation

CONTACT: Andrew Draxler NEC, Sandy Hook

OBJECTIVE

Determine the temporal and spatial distribution of anthropogenic contaminants in estuarine and continental shelf resources and habitats; understand the roles of chemical processes and natural variability that govern the fate of organic carbon and contaminants in natural and polluted continental shelf habitats; and assess the biological effects of natural and anthropogenic materials on the demersal food web.

ANTICIPATED ACTIVITIES IN FY90

1. Conclude sampling and monitoring of contaminants and chemical processes in sediments and resources from the 12-Mile Dumpsite; and conduct laboratory analyses of trace metals, organic carbon and organic contaminants.
2. Participate in the NOAA inter-lab QA exercise for organic contaminants.
3. Conduct field experiments on effects of sediment contaminants on larval invertebrate setting.
4. Support FED's studies of recruitment processes on Georges Bank with analyses of nutrients and phytoplankton primary production.

ANTICIPATED PRODUCTS IN FY90

1. Presentation of results from the 12-Mile Dumpsite Recovery Study.
2. Annual interpretive report on New York Bight 12-Mile Dumpsite Recovery Study.
3. Reports on trace metal contaminants in pelagic fish, and demersal fish at the 106-Mile Dumpsite.
4. Report on the distribution of trace metals in sediment and fish tissue in 13 Northeast estuaries for the NOAA Status and Trends 1984-1986.

Environmental Processes Division
Chemical Processes Branch

Coastal Dynamics Investigation

CONTACT: William Phoel NEC, Sandy Hook

OBJECTIVE

Conduct ecosystem monitoring, field research, and laboratory experiments to quantify natural environmental variability which influences fish production on the Northeast Continental Shelf, and the effects of anthropogenic loading on coastal resource species and habitats as required by environmental managers for decision making.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct weekly sampling to describe the annual cycle of phytoplankton biomass off New Jersey.
2. Support FED recruitment study on Georges Bank concerning phytoplankton biomass variability.
3. Prepare report on seabed oxygen consumption rates on the Northeast continental shelf for the *NOAA Technical Memorandum* series.
4. Analyze and interpret EPD 12-Mile Dumpsite Recovery Study samples and data.
5. Prepare manuscript on New York Bight 12-Mile Dumpsite Recovery Study.
6. Conduct field studies of effects of New York Bight coastal hypoxia on resource species.
7. Conduct laboratory studies on biological effects of harmful algal blooms on resource and prey species.
8. Participate in activities of the Interagency Committee to study causes and effects of *Gyrodinium aureolum* blooms.

ANTICIPATED PRODUCTS IN FY90

1. Draft on vertical distribution of phytoplankton biomass on the Northeast continental shelf.
2. Manuscript on community relationship of inshore demersal fishes.
3. Annual interpretive report on New York Bight 12-Mile Dumpsite Recovery Study.
4. Manuscript on normal seasonal hematological variation and disease in winter flounder.
5. Draft manuscript on growth potential of *Gonyaulax tamarensis* in Long Island Sound and New Jersey.
6. Annual report on NMFS diving activities for NOAA Dive Office and NMFS Headquarters.

Environmental Processes Division
Environmental Assessment Branch

Benthos Investigation

CONTACT: Robert Reid — NEC, Sandy Hook

OBJECTIVE

Monitor and analyze benthos to describe spatial/temporal changes as indicators of biological effects of environmental change, and available forage for resource species.

ANTICIPATED ACTIVITIES IN FY90

1. Participate in the EPD 12-Mile Dumpsite Recovery Study; process benthic samples; and analyze and correlate benthic data with other study variable.
2. Prepare journal manuscript on responses of invertebrates to contaminants in sediment trays in clean and contaminated areas.
3. Compare responses of invertebrates to heavy metals and organic contaminants in sediment trays in Raritan Bay and control areas.
4. Conduct and consult on studies for enhancing clam abundance in Great South, Raritan, and Barnegat Bays.
5. Prepare manuscript on the history of fishing in Raritan Bay, emphasizing the effects of anthropogenic changes.
6. Prepare a Center Reference Document on the history of the fishing industry in Raritan Bay.

ANTICIPATED PRODUCTS IN FY90

1. Quarterly progress reports and annual report on the 12-Mile Dumpsite Study.
2. Manuscript on community structure of Northeast benthos, 1978-1985.

Environmental Processes Division
Environmental Assessment Branch

Environmental Analysis Investigation

CONTACT: Stu Wilk — NEC, Sandy Hook

OBJECTIVE

Determine the effects of natural and anthropogenic factors upon biota of nearshore and estuarine waters focusing on the 12-Mile Dumpsite.

ANTICIPATED ACTIVITIES IN FY90

1. Participate in the EPD 12-Mile Dumpsite Recovery Study and provide statistical and consultant assistance relative to sample/experimental design and data analysis on the Investigation/Branch/Division levels.

2. Complete development and begin analysis and interpretation of food habits data base relative to hakes, winter flounder, and lobster; and finfish/megainvetebrates data base to allow for comparisons as dumping ceases.

3. Apply analytical and interpretive techniques to detect change in and out of the 12-mile dump site impact area.

4. Conduct analyses and prepare descriptive material on the study where winter flounder were tagged to monitor population movements associated with the 12-mile dump site.

5. Conduct environmental studies relative to selected species (winter flounder and lobster) and low dissolved oxygen; and experimentally investigate effects of low dissolved oxygen on avoidance, growth, and survival of resources species (*e.g.*, American lobster).

ANTICIPATED PRODUCTS IN FY90

1. Quarterly reports of research findings and annual interpretive report on the 12-Mile Dumpsite Recovery Study.

2. Manuscript on the effects of oiled prey/sediments on winter flounder based on results of chemical analyses.

Fisheries Ecology Division
Ecosystems Dynamics Branch

Early Life Stage Dynamics Investigation

CONTACT: Geoffrey Laurence NEC, Narragansett

OBJECTIVE

Conduct quantitative research on physical and biological mechanisms controlling recruitment processes of major pelagic and demersal fish species in the Northeast Continental Shelf Ecosystem, with emphasis on early life stage survival, to define the natural causes for year class failures following spawning.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct laboratory research on the biology of early life stages to support population assessment.
2. Analyze data from winter flounder viability research.
3. Initiate laboratory biochemical analyses of gadid samples from Georges Bank for growth and condition indices.
4. Continue analyses of the relevant biological and physical parameters affecting feeding, growth, and mortality rates of juvenile and larval fishes on Georges Bank.
5. Conduct analyses of sand lance experiments concerning taxonomy and early life stage growth.
6. Conduct abundance, distribution, and trophodynamic studies of juvenile herring in the frontal zone of the northern edge of Georges Bank during a process-oriented research cruise.
7. Initiate biochemical analyses of herring samples collected on monitoring cruises for growth and condition.

ANTICIPATED PRODUCTS IN FY90

Publications and reports on significant research findings.

Fisheries Ecology Division
Ecosystem Dynamics Branch

Plankton Ecology Investigation

CONTACT: John Green NEC, Narragansett

OBJECTIVE

Monitor and assess lower trophic levels as an indication of broad scale ecological and environmental changes; and the inter-annual and seasonal variability in community structure, abundance, and distribution of zooplankton and micronekton components of the Northeast Continental Shelf ecosystem to characterize changes in food availability to planktivorous pelagic and early life history stages of important fish stocks.

ANTICIPATED ACTIVITIES IN FY90

1. Monitor, assess, and index the plankton community and its environment in the Gulf of Maine, Georges Bank, Southern New England, and Mid-Atlantic Bight subareas of the Northeast Continental Shelf ecosystem.

2. Conduct process oriented studies of invertebrate predators and prey of pre-recruit stages of fish, in conjunction with Early Life Stages and Food Chain Dynamics Investigations.

3. Enter and quality control all station, net, and zooplankton data into the Center ADP System, and provide basic descriptive statistics and analyses for zooplankton abundances.

4. Prepare maps and data listings for atlases of the MARMAP (Marine Resources Monitoring, Assessment, and Prediction) Ecosystem Data Base.

5. Develop procedures for sizing and counting micronekton and zooplankton using a laboratory image analysis system and the flow-through capability.

6. In collaboration with EPD, monitor monthly zooplankton, surface temperature, and surface salinity in the Gulf of Maine and New York Bight using ships of opportunity (SOOP).

7. Monitor and process daily solar radiation data at Newport, RI.

8. Prepare atlas of zooplankton and phytoplankton species composition and relative abundance, New York to the Gulf Stream 1971-1988 for *NOAA Technical Memorandum* series.

9. Study herring and mackerel stomachs to determine utilization of zooplankton prey; and prepare a report on herring and mackerel feeding in relation to available zooplankton prey.

10. Participate in field sampling program to study prey utilization of zooplankton and feeding conditions for planktivorous fish.

11. Provide logistic support for U.S.-Polish cooperative ecosystem studies.

12. Represent NEFC at New England Power Plant Advisory Board meetings.

ANTICIPATED PRODUCTS IN FY90

1. Report on variability of Gulf of Maine and Georges Bank zooplankton abundance correlated with hydrographic conditions from the MARMAP Ecosystem Monitoring Data Base.

2. Report on the relationship of hydrographic conditions to distribution of copepoda *C. finmarchrcus* on the Northeast Continental Shelf.

3. *Atlas of zooplankton species composition and relative abundance, Massachusetts to Cape Sable, 1961-1988* (NOAA Technical Memorandum).

Fisheries Ecology Division
Ecosystem Dynamics Branch

Ichthyoplankton Dynamics Investigation

CONTACT: Wallace Smith NEC, Sandy Hook

OBJECTIVE

Characterize the annual status and changes in ichthyoplankton, track decadal changes in the community structure of coastal fishes, and estimate the total finfish biomass in the Northeast Continental Shelf ecosystem.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct October and November surveys of the Georges Bank area to determine distribution, abundance, growth, and mortality of herring larvae.
2. Conduct December, January, and March surveys of the Georges Bank area to determine distribution abundance, growth, and mortality of sand lance.
3. Conduct fecundity study on Atlantic herring from the Nantucket Shoals/Massachusetts Bay/Georges Bank area.
4. Conduct fecundity study on sand lance from the Southern New England/Georges Bank area.
5. Conduct aging study on larval summer flounder using otoliths.
6. Complete planning and preparation for the re-establishment of ichthyoplankton monitoring in FY91.

ANTICIPATED PRODUCTS IN FY90

1. Report on the distribution, abundance, growth, and mortality of herring larvae and index of adult spawning biomass for 1988 spawning season in the Georges Bank/Nantucket Shoals area.
2. Manuscript describing early life history of summer flounder based in part on larval data from the MARMAP time series.
3. Draft paper describing seasonal variation in development at age for summer flounder larvae.
4. Manuscript on Atlantic herring based on the 17-year ICNAF/MARMAP time series for the Nantucket Shoals/Massachusetts Bay/Georges Bank area.
5. Completed identification and staging of fish eggs for 1987, the final year of the MARMAP time series.

Fisheries Ecology Division
Ecosystem Dynamics Branch

Apex Predators Ecology Investigation

CONTACT: John Casey NEC, Narragansett

OBJECTIVE

Study the biology of highly migratory species of apex predators with emphasis on several species of large sharks. Special effort is directed to investigating predator-prey interaction, energetics, reproduction, and age and growth of shark populations of the Northeast Continental Shelf ecosystem. North Atlantic, Gulf of Mexico, and Caribbean Sea.

ANTICIPATED ACTIVITIES IN FY90

1. Continue the cooperative shark tagging program.
2. Continue age and growth, reproductive, and predator/prey studies of sharks.
3. Collect biological samples and data from shark tournaments and commercial fisheries.
4. Maintain an international research program on sharks (Mexico, Bermuda, Spain, Portugal, Britain, Japan).

ANTICIPATED PRODUCTS IN FY90

1. The *Shark Tagger* newsletter.
2. Data base on Atlantic sharks.
3. Reports for shark management plans.
4. Publications on age and growth of the blue shark.
5. Ph.D. dissertation on age and growth of the dusky shark.
6. Report, "Elasmobranchs as living resources: Recent advances in systematics and ecology."
7. Publication on shark reproductive strategies as a limiting factor in shark fisheries.
8. Report on food habits of the sandbar shark.
9. Summary of historical tournament data.

Fisheries Ecology Division
Ecosystem Dynamics Branch

Food Chain Dynamics Investigation

CONTACT: Marvin Grosslein NEC, Woods Hole

OBJECTIVE

Conduct a framework of mathematical models for developing predictions of long-term effects of various harvesting strategies and environmental trends on the yield potential and species composition of fish populations, and for helping sort out the effects of fishing and pollution from natural environmental factors.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct studies on food webs focusing on diet and consumption rates of fish and coupling between pelagic and demersal components.
2. Sample fish stomachs on fall and spring trawl surveys; enter and quality control FY89 and 90 stomach data; and work up backlog of preserved stomachs and data from special cruises.
3. Conduct experimental, analytical and modeling studies in support of the NEFC recruitment initiative.
4. Compile and analyze data on the distribution, abundance, size composition, growth and mortality rates of selected fish species; and develop models of the Northeast Continental Shelf ecosystem focusing on multispecies fish production models.
5. Collaborate with Apex Predators Ecology Investigation to develop first approximation models of predation by large sharks on fish and squid.
6. Continue analysis of long-term changes in relative biomass and species composition of fish populations in the Gulf of Maine, Georges Bank, and Mid-Atlantic Bight.
7. Evaluate multivariate time series techniques and other statistical methods of fitting models and testing hypotheses about long term changes in fish populations.
8. Sample mackerel stomachs acquired on Georges Bank in May 1990 and determine the prey field (focusing on 0-group fish); and sample stomachs of fish caught with bottom trawl on Georges Bank in the summer (focusing on predation on 0-group herring and gadids).

ANTICIPATED PRODUCTS IN FY90

1. NOAA Technical Memorandum, Synopsis of diets of 180 species of Northwest Atlantic Fishes.
2. Report on the abundance and composition of macro-benthic invertebrates of the Georges Bank and Gulf of Maine regions.
3. Paper on modeling effects of harvesting on reproductive output of sharks and rays.
4. Computerized and quality controlled data of stomachs and trawl catch for the FY89 gadid recruitment cruise.
5. Journal manuscript on the relative importance of various sources of error in back-calculated spawning stock estimates from larval catches, based on the MARMAP simulation model.
6. Analysis of 0-group gadid mortality estimates and comparison of these estimates with predation rates on Georges Bank, 1984 - 1987.
7. Extended gadid recruitment model that includes predation mortality on 0-group gadids.
8. Revised manuscript on large scale synchrony in recruitment of gadid populations of Northwest Atlantic.
9. Report on factors associated with variable recruitment of Georges Bank haddock 1981 - 1983.
10. Report on predation by pelagic species (especially mackerel) on 0-group fish on Georges Bank during May 1986.

11. Program for first stage of multispecies model of Georges Bank.

12. Manuscript on a multispecies model of trophic interactions among herring, mackerel, and sand lance.

13. Report on initial estimates of consumption for major fish predators for 1973 - 1987.

14. Report on evaluation of food habits sampling strategies based on sampling variability in relation to data needs for multispecies models.

15. Refined life history model of pollution effects on estuarine populations using winter flounder as an example.

Fisheries Ecology Division
Ecosystem Dynamics Branch

Marine Mammals Investigation

CONTACT: Tim Smith NEC, Woods Hole

OBJECTIVE

Develop an information base on the status of several marine mammal populations, including abundance and distribution, for determining possible effects of fishing activities.

ANTICIPATED ACTIVITIES IN FY90

1. Administer mandated research funds for marine mammal research research planning; reports to Congress, U.S. Marine Mammal Commission, and the International Whaling Commission.

2. Administer contracts to: monitor whale watching in Cape Cod Bay, Long Island Sound, and Jefferies Ledge; collect and analyze marine mammal sighting data during NEFC resource surveys; collect and analyze stomach contents of mammals killed incidentally in fishing operations; measure oceanographic conditions and fine-scale distribution for humpback and right whales; conduct aerial surveys of seal haulouts.

3. Administer agreements on: distribution and individual identification of North Atlantic right whales; and population dynamics and movement patterns of right whales.

4. Receive, evaluate, and archive data from research contracts and agreements.

5. Determine the number of marine mammals killed annually in the New England gill net and foreign mackerel fisheries, evaluate kill rates and possible management controls; and effects of incidental fishery takes and whale watching.

6. Monitor rates of incidental kill in other U.S. fisheries to identify potential problems using NEFC sea sampling data.

7. Determine significant ecological relationships between fishery resources and marine mammals and habitat requirements of marine mammals during seasonal movements.

8. Develop predictive model of habitat requirements for cetaceans.

9. Determine optimum sustainable population size for marine mammal populations with significant human interactions, past and present.

10. Determine status of endangered North Atlantic right whale population.

11. Determine optimum sustainable population size of the Gulf of Maine-Bay of Fundy harbor porpoise population, evaluate effects of incidental mortalities in the gill net fishery; and harbor seal population, evaluating the effects of incidental mortalities in gill net and lobster fishery.

12. Complete development and testing of line transect survey methods for harbor porpoise, analyzing experimental 1988 and 1989 data, conducting additional experimental studies.

13. Develop radio and satellite tagging capability for cetaceans to determine migratory patterns.

14. Analyze survey indices for trends in harbor seal abundance.

15. Monitor status of pelagic delphid species taken incidentally in other fisheries to determine need for OPS determination.

16. Participate in activities of the International Whaling Commission; Committee of Scientific Advisors/U.S. Marine Mammal Commission, and the ICES Marine Mammals Committee.

ANTICIPATED PRODUCTS IN FY90

1. Data from research contracts.

2. Review manuscript on methods for assessing the status of the harbor porpoise populations in the Gulf of Maine and the Bay of Fundy.

3. Design surveys to estimate harbor porpoise abundance and determine distribution patterns.

Fisheries Ecology Division
Experimental Biology Branch

Genetics and Life History Investigation

CONTACT: Arlene Longwell NEC, Milford

OBJECTIVE

Examine the linkages between fisheries recruitment, genetic variability, and adaptation as reproductive fitness; and explore ecological factors limiting hard clam recruitment in Long Island Sound in an effort to determine the most limiting factors on specific life stages.

ANTICIPATED ACTIVITIES IN FY90

1. Continue field studies of effects of predation on recruitment.
2. Continue field experiments on effects of natural substrate on settlement and survival; and analyze data on settlement and survival of post-set.
3. Begin mesocosm experiments on survival of post-set.
4. Continue exposure experiments of shellfish embryos to combination of PCBs and aromatic hydrocarbons.
5. Collect and analyze cytogenetic and viability data from exposure experiments.
6. Participate in the Winter Flounder Workshop.
7. Examine various measures of relationships between genotype, year-class, and climate/weather; and relationships between female genotype, temperature requirements for gametogenesis, embryo development, and development/growth rate.
8. Measure genotypic change over life-cycle stage, and embryo abnormality/survival in fish from industrially polluted Bridgeport Harbor following hormonal induction of gametogenesis.
9. Measure stock differentiations in Long Island Sound using ribosomal gene clusters and chromosome banding.
10. Continue to adapt mt- and sat-DNA procedures for use on fish specimens with biotin- (in place of radio-) labeled probes.
11. Extract and store extracted DNA from all specimens collected to date for mt- and sat-DNA analyses (flounder, haddock, sea scallop, herring).
12. Explore *in situ* DNA/DNA and DNA/RNA hybridization techniques for fish/shellfish early-life stages, and adaptations of micro-DNA procedures for adaptation to tiny early-life stages of fish/shellfish.

ANTICIPATED PRODUCTS IN FY90

1. Technical report on effects of predation on early-life history and survival.
2. Collaborative report with Microbiology Investigation on 1986-1988 Long Island Sound clam recruitment studies.
3. Manuscripts resulting from study of effects of pollution in Long Island Sound on clam reproduction.
4. Ph.D. dissertation on cytogenetic and viability data from exposure experiments.
5. Manuscript on the effects of pollution in Long Island Sound on winter flounder reproduction.
6. Manuscripts for fishery scientists on genetics and adaptability to change in climate; and genetic implications of change in population age structure: lessons for fisheries from animals/plants at large.
7. Model of integrating diverse measures of sublethal physiological/reproductive effects, and expressing these as quantitative losses in fecundity and early-life stage viability.

Fisheries Ecology Division
Experimental Biology Branch

Microbiology Investigation

CONTACT: Richard Robohm NEC, Milford

OBJECTIVE

Define how microorganisms affect survival and growth of living marine resources; specifically, define the relationships between marine species, determine the microecology of bacteria and their pathogenicity to bivalve mollusks both at estuarine sites and in the laboratory, and characterize the effects of environmental stress on the susceptibility of fish and mollusks to microbial diseases.

ANTICIPATED ACTIVITIES IN FY90

1. Complete development of mass-culture methods for strains of *Prorocentrum*, a dinoflagellate producing nuisance blooms in Long Island Sound.

2. Investigate the interactions between heavy-metal pollutants and nutrients upon microalgae through laboratory experiments and collaborative work with Los Alamos National Laboratory.

3. Conduct taxonomic and biochemical analyses of Long Island Sound phytoplankton samples as a collaborative contribution to life history studies of bivalve recruitment and growth.

4. Sustain the Milford Microalgal Culture Collection and operate the 36-unit semi-continuous microalgal culture system and open-tank algal cultures.

5. Analyze winter flounder from clean and polluted estuarine sites for antibodies to bacterial pathogens.

6. Develop and conduct assays to detect the effects of pollutants and other stressors on immunity in flounder, scallops, clams, and oysters.

7. Conduct histopathologic examinations and analyze data for kidney and gill tissues of winter flounder collected during the Northeast segment of Status and Trends cruise; and examine histopathology of kidneys of winter flounder collected from Boston Harbor and Georges Bank environments.

8. Set up a functional electron microscopy preparation laboratory in the Department of Fisheries, Aquaculture, and Pathology/University of Rhode Island develop collaborations with faculty members; and provide assistance to graduate students.

9. Continue preparation of a histological atlas for winter flounder larvae with the University of Rhode Island.

10. Conduct field study on gross pathology of winter flounder from estuarine sites.

11. Continue low-dissolved-oxygen laboratory experiments on winter flounder.

ANTICIPATED PRODUCTS IN FY90

1. Manuscript describing development and characteristics of seawater-tolerant strains of the freshwater cryptophyte flagellate, *Chilomonas paramecium*, a potential source of nutrition for bivalve mollusks reared in the laboratory.

2. Draft manuscript summarizing nutritional aspects of collaborative studies on hard clam recruitment and growth in Long Island Sound.

3. Presentation of data on bacterial pathogens of stressed fish at Winter Flounder Biology Workshop.

4. Manuscript on effects of centrifugation stress on oyster blood cells.

5. Manuscript on the bacterial ecology of planted hard clams at selected sites in Long Island Sound.

6. Manuscript on assessment of bacterial pathogens in oyster grounds of Long Island Sound.

7. Tenth Annual Shellfish Biology Seminar.

8. Review paper on bacterial ecology of Long Island Sound.

9. Text describing histopathologic conditions of fish and shellfish catalogued in the Registry of Marine Pathology.

10. Manuscript and mock-up of Color Atlas of Fish and Shellfish Histopathology based on the Registry of Marine Pathology holdings.

11. Presentations at the Winter Flounder Biology Workshop, including a poster of progress on histological atlas of winter flounder larvae, and results of New Haven fin-rot research.

12. Manuscript on gross pathology of winter flounder from estuarine sites.

Fisheries Ecology Division
Experimental Biology Branch

Physiological Ecology Investigation

CONTACT: Frederick Thurberg NEC, Milford

OBJECTIVE

Examine marine animals of the Northwest Atlantic to determine pollutant effects of water quality on their life function and recruitment.

ANTICIPATED ACTIVITIES IN FY90

1. Continue studies on the reproductive success of winter flounder from Long Island Sound and effects of pollutants on winter flounder gills; continue monitoring embryonic metabolism of winter flounder, including, lipids, in unfertilized eggs and newly-hatched larvae.

2. Conduct feasibility study on the use of mini-diluters to expose winter flounder embryos to heavy metals.

3. Conduct study on the reproductive success of lobster from contaminated and clean areas in Long Island Sound.

4. Conduct feasibility studies on chemical analysis of tri-butyl tin in animal tissues.

5. Conduct metal-exposure studies with bay scallops.

6. In cooperation with the NMFS Beaufort Laboratory, conduct an experiment on biochemical and biological effects of metal exposure on spawning potential of inshore and offshore populations of sea scallops; and develop a manuscript on the distribution of metals in different tissues of sea scallops.

7. Investigate the role and determine prevalence of shell disease in marine crustacean populations of commercial importance; conduct experiments to examine the progression of shell disease and its effect on survival; examine histopathology of hepatopancreas of crustaceans to determine whether a relationship with shell disease exists; organize a long-term working group of scientists working on shell disease problems of Atlantic coast crustaceans; and organize and convene a half-day session on shell disease at the 1990 NSA meeting.

ANTICIPATED PRODUCTS IN FY90

1. Report on winter flounder development and growth during dredging of Milford Harbor.

2. Chemical analysis of metals and PCBs in lobster embryos.

3. Chemical analysis of PCBs in tissues of winter flounder.

4. Manuscript on hematology of the yellowtail flounder.

5. Winter Flounder Biology Workshop.

6. Interim reports on lobster reproductive success studies.

Fisheries Ecology Division
Experimental Biology Branch

Invertebrate Pathology Investigation

CONTACT: Frederick Kern NEC, Oxford

OBJECTIVE

Track the location and levels of disease activity caused by the protozoan pathogens MSX (*Haplosporidium nelsoni*) and Dermo (*Perkinsus marginus*) in oysters and the soft-shelled clam sarcoma to understand the mechanisms for their virulence, transmission, and spread in both the wild and under conditions of culture; and develop new diagnostic techniques to deal with these and other invertebrate disease problems.

ANTICIPATED ACTIVITIES IN FY90

1. Investigate molluscan and crustacean infectious and non-infectious diseases of local importance.
2. Conduct research experiments on clinical aspects of selected serious diseases of Chesapeake Bay oysters and clams.
3. Conduct research to develop diagnostic methods for studying molluscs and crustacea.
4. Monitor epizootic status of sarcoma disease in Chesapeake Bay soft-shelled clams.
5. Assist Federal and state agencies, commissions, and councils in the development of shellfish health management strategies.
6. Examine quarterly samples of oysters from Chile for parasites and pathology.
7. Develop an atlas and manual of bivalve molluscan pathology.

ANTICIPATED PRODUCTS IN FY90

Reports and publications on significant research findings.

Conservation and Utilization Division
Population Biology Branch

Resource Surveys Investigation

CONTACT: Tom Azarovitz — NEC, Woods Hole

OBJECTIVE

Provide quantitative population, oceanographic, and environmental data for assessments and ecosystem research.

ANTICIPATED ACTIVITIES IN FY90

1. Plan and conduct spring and autumn bottom trawl surveys.
2. Plan and conduct scallop and shrimp cruises; and plan surf clam-ocean quahog cruises.
3. Continue to study and analyze gear and vessel effects.
4. Continue to maintain and test clam, scallop, and trawl gear.
5. Improve data accessibility and reliability through quality control and corrections to historical data files; and improve data entry and archiving procedures.
6. Introduce new technology to Conservation and Utilization Division surveys.
7. Evaluate shellfish survey precision and efficiency.

ANTICIPATED PRODUCTS IN FY90

1. *Fishermen's Report*
2. Audited bottom trawl survey and shellfish survey data files.
3. Manuscript on vessel fishing power effects.
4. Manuscript on effects of gear configuration on survey catch rates.
5. Documentation of historical survey program station data.
6. Automated station selection and plotting for bottom trawl surveys.
7. Evaluation of SCANMAR temperature data.
8. Data samples and reports requested by constituent groups.
9. Multi-species indices for the status of the stocks document.

Conservation and Utilization Division
Population Biology Branch

Fisheries Biology Investigation

CONTACT: Frank Almeida — NEC, Woods Hole

OBJECTIVE

Compile data and develop information relative to growth and mortality rates, maturation, fecundity, and physiological and behavioral characteristics. Major emphasis is directed toward determining age for characterizing population age structure.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct age determinations for cod, haddock, pollock, mackerel, butterfish, redfish, silver hake, yellowtail, summer and winter flounder.
2. Develop improved biological parameter estimates.
3. Improve data accessibility and reliability.
4. Provide minimal ageing support to constituent groups.

ANTICIPATED PRODUCTS IN FY90

1. Audited age data files.
2. Report on white hake age validation studies.
3. Manuscript on sea scallop age validation studies.
4. Basic age-length keys for sea scallops and white hake.
5. Evaluation reports of new technology with recommendations for implementation; and potential stock boundaries for winter flounder employing BIOSONICS gear.
6. Manuscript on the biology of northern shrimp.
7. Manuscript on haddock growth and maturation.
8. Manuscript on the biology of witch flounder.
9. Report summarizing maturation data for assessments.

Conservation and Utilization Division
Fisheries Statistics and Economics Branch

Fisheries Statistics Investigation

CONTACT: Ronnee Schultz NEC, Woods Hole

OBJECTIVE

As mandated by the Magnuson Fisheries Conservation and Management Act of 1976, collect basic fisheries statistics; including landings, economic, fishing effort, and biological data that characterize the fisheries of the Northeast Continental Shelf Large Marine Ecosystem as well as those components of northeast fisheries that exploit the Atlantic Oceanic Large Marine Ecosystem.

ANTICIPATED ACTIVITIES IN FY90

1. Collect and process basic fisheries statistics, including documentation of 45,000 individual vessel trips, 12,000 interviews of vessel operators, and 1,700 biological samples.
2. Coordinate with state agencies to obtain basic fisheries statistics.
3. Coordinate with Southeast Fisheries Center (SEC) to finalize swordfish statistics for the Northeast Region and provide to SEC swordfish and other large pelagic carcass weights from the longline fisheries.
4. Collect and process surf clam and ocean quahog data from processors and vessel logs.
5. Conduct surveys to collect number of processors, employment, production type, and value of products for processed and fresh or frozen or prepared and packaged fish and shellfish, canned products, and fishermen's prepared products.
6. Conduct an annual canvass of the inshore fisheries to collect numbers of fishermen, boats, and gear.
7. Conduct an operating units survey to collect vessel characteristics, crew size, and gear fished.
8. Conduct a wholesale dealers survey to collect number of wholesalers and products handled.
9. Conduct daily collections of landings and values for the *Market News* electronic bulletin board.

ANTICIPATED PRODUCTS IN FY90

1. Basic fisheries statistics reports.
2. Reports for publication in *Fisheries of the U.S., Fisheries Statistics of the U.S., Frozen Fishery Products, Processed Fishery Products, Fish Meal and Oil, and Processors* and *Wholesale Dealers of Fishery Products of the U.S.*
3. Data for publication in Boston *Market News, Status of the Fisheries Resources off the Northeastern United States, NAFO Statistical Bulletin, NAFO Sampling Year Book, FAO Yearbook of Fishery Statistics,* and *ICCAT Statistical Bulletin.*

Conservation and Utilization Division
Fisheries Statistics and Economics Branch

Foreign and Domestic Sea Sampling Investigation

CONTACT: Patricia Gerrior NEC, Woods Hole

OBJECTIVE

As mandated by the Magnuson Fisheries Conservation and Management Act of 1976, provide 100 percent observer coverage of foreign fishing vessels in the U.S. Exclusive Economic Zone off the East Coast and Gulf of Mexico; and create and maintain a domestic sea sampling database to assist in the characterization and assessment of the fisheries in the northeast.

ANTICIPATED ACTIVITIES IN FY90

1. Monitor compliance on foreign fishing vessels.
2. Collect biological data and samples.
3. Manage and oversee the agreement for supplemental observer program.
4. Provide domestic observer/sea samplers for swordfish drift and gillnet vessels, as required.
5. Train and certify new supplemental observers.

ANTICIPATED PRODUCTS IN FY90

1. Weekly foreign and joint venture quota reports.
2. Monthly reports on foreign observer and domestic (MMPA categories I and III) sea sampler coverage.
3. Summary report on swordfish drift gillnet fishery.
4. Data for publication in *Fisheries of the United States, 1989.*
5. Data summaries on marine mammal incidental takes from foreign and joint venture fishing activities.

Conservation and Utilization Division
Fisheries Statistics and Economics Branch

Biostatistics Investigation

CONTACT: Joan Palmer — NEC, Woods Hole

OBJECTIVE

Develop and manage databases containing U.S. and foreign fishery statistics, including commercial and recreational fisheries data; and provide accurate and timely data for estimating the impacts of fishing on living marine resources, monitoring the effects of regulatory measures, and compiling fishery statistics as required by the Fish and Wildlife Act of 1956 and the Magnuson Fisheries Conservation and Management Act of 1976.

ANTICIPATED ACTIVITIES IN FY90

1. Compile monthly landings, effort, and biological data for inclusion in appropriate databases.
2. Maintain and update databases.
3. Respond to data requests.

ANTICIPATED PRODUCTS IN FY90

1. Databases containing U.S. commercial, U.S. recreational, and foreign fishery statistics.
2. Monthly data reports on U.S. commercial landings for NMFS and NAFO.
3. Annual input to *Status of the Fisheries Resources off the Northeastern United States*.
4. Data summaries for user groups as requested.

Conservation and Utilization Division
Fisheries Statistics and Economics Branch

Fisheries Economics Investigation

CONTACT: Philip Logan — NEC, Woods Hole

OBJECTIVE

Increase the net benefits that the nation derives from living resource exploitation, both recreational and commercial, by providing an understanding of the economic forces affecting the exploitation of the fisheries in the northeast.

ANTICIPATED ACTIVITIES IN FY90

1. Develop time series data bases as required.
2. Participate in fleet modeling group studies.
3. Review Regional FMPs as required.
4. Implement vessel simulators on the VAX.
5. Collect daily landings and ex-vessel prices.
6. Collect data on the Boston and Fulton wholesale markets.
7. Collect import data at customs ports.
8. Collect cold storage inventory and foreign frozen product price data.

ANTICIPATED PRODUCTS IN FY90

1. Economic Overview section for *Status of the Fisheries Resources off the Northeastern United States* NOAA Technical Memorandum.
2. Updates to the Trade Balance Report, Fishery Performance Tables, and economic data bases for *Status of the Fisheries Resources off the Northeastern United States* NOAA Technical Memorandum.
3. Time series data bases.
4. Report on intra-year conduct of the scallop fishery.
5. Report on post-ICJ scallop firm behavior.
6. Analysis of weighout coverage through vessel economics studies.
7. Summary of sea sampling economic data.

Conservation and Utilization Division
Population Dynamics Branch

New England Offshore Fishery Resources Investigation

CONTACT: Frederic Serchuk NEC, Woods Hole

OBJECTIVE

Develop information on the present and likely future status of the fishery resources off New England.

ANTICIPATED ACTIVITIES IN FY90

1. Update stock assessments for assigned species and provide current scientific information for yellowtail flounder, cod, haddock, American plaice, sea scallops, redfish, Georges Bank winter flounder, silver hake, pollock, and Grand Banks stocks.

2. Participate in joint US-Canada pollock tagging study.

3. Prepare for and participate in semi-annual Stock Assessment Workshops.

4. Review P.L. 88-309 and 88-304 completions and proposal reports, draft Fishery Management Plans, Chesapeake Bay Stock Assessment Committee proposals, NMFS Regional Office and Headquarters proposals, and journal manuscripts.

5. Provide assistance to implementing NEFC data collection.

6. Review and evaluate adequacy of 1989 commercial biological sampling activities, and develop 1990 commercial sampling requirements, including port sampling and sea sampling, for the Fisheries Statistics Investigation.

7. Participate in the scientific crew of the NEFC survey program.

8. Provide technical information to the regional Fishery Management Councils.

9. Provide analytical support to the New England Fishery Management Council.

10. Participate in activities of Multispecies Conservation Engineering, and Scallop Conservation Engineering Committees of the New England Fishery Management Council; ICES Statutory Meeting and Advisory Committee on Fishery Management; annual US/Canada Scientific Discussions; Canadian Atlantic Fisheries Scientific Advisory Committee; and NEFC Maturation Working Group.

11. Assist in the preparation of "U.S. Research Report for 1989" for the Northwest Atlantic Fishery Organization.

12. Conduct research on fisheries technical and biological interactions.

13. Develop a bio-economic modeling framework of the multispecies New England fishing system for the evaluating the effect of changes in management approaches and regulations on resources and harvesters.

ANTICIPATED PRODUCTS IN FY90

1. Sections for *Status of the Fishery Resources off the Northeastern United States* NOAA Technical Memorandum.

2. Summary of analyses of USA sea scallop research vessel survey.

3. Major revision of assessment information for pollock.

4. Evaluation of the suitability of NEFC commercial data base for monitoring trawl and sea scallop fleets on an individual vessel basis (prepared in cooperation with Fisheries Economics Investigation).

5. Examination of the spatial distribution patterns from trawl survey and commercial fisheries data, as a step in understanding directability of fishing effort in the New England multispecies fishery.

Conservation and Utilization Division
Population Dynamics Branch

Mid-Atlantic Offshore Fishery Resources Investigation

CONTACT: Steve Murawski NEC, Woods Hole

OBJECTIVE

Develop information on the present and likely future status of the offshore fishery resources in the Mid-Atlantic.

ANTICIPATED ACTIVITIES IN FY90

1. Update stock assessments for assigned species and provide current scientific information on surf clams, ocean quahogs, butterfish, mackerel, *Loligo* squid, *Illex* squid, scup, and American lobster.

2. Prepare for and participate in semi-annual Stock Assessment orkshops.

3. Review P.L. 88-309 and 88-304 completions and proposal reports, draft Fishery Management Plans, Chesapeake Bay Stock Assessment Committee proposals, NMFS Regional Office and Headquarters proposals, and journal manuscripts.

4. Provide assistance to implementing NEFC data collection.

5. Participate in the scientific crew of the NEFC survey program.

6. Assist in preparation of "U.S. Research Report for 1989" for the Northwest Atlantic Fishery Organization.

7. Participate in the activities of Scientific and Statistical Committee of the Mid-Atlantic Fishery Management Council; ICES Statutory meeting and chair the Multispecies Working Group; annual US/Canada Scientific Discussions; Scientific Committee of Commission on Antarctic Living Marine Resources; and U.S./France Cooperative Program in Oceanography.

8. Conduct research on fisheries technical and biological interactions.

9. Continue analysis of a deterministic model of effects of predatory fish, marine mammals, and seabirds on the East Coast pelagic fish ecosystem.

10. Evaluate multispecies size composition as a conservative property of an exploited system.

11. Review and evaluate adequacy of 1989 commercial biological sampling activities, and develop 1990 commercial sampling requirements, including port sampling and sea sampling, for the Fisheries Statistics Investigation.

12. Provide technical information to regional fishery management agencies.

13. Continue study of northern shrimp - Groundfish Subsystem, under the U.S./France Cooperative Program in Oceanography.

14. Implement a cooperative research program in fisheries biology under Marie Sklodska Curie Program with Polish colleagues.

ANTICIPATED PRODUCTS IN FY90

1. Updated quota advice for *Loligo* squid, *Illex* squid, butterfish, and mackerel for the Mid-Atlantic Fishery Management Council.

2. Sections for *Status of the Fishery Resources Off the Northeastern United States* NOAA Technical Memorandum.

3. Major revisions of stock assessment information for *Loligo* squid, scup, and American lobster.

4. Presentation on lobster population dynamics at the Shellfish Life History Symposium.

5. Plan for intensive field sampling program for pelagic interactions jointly with Polish colleagues using a deterministic model.

Conservation and Utilization Division
Population Dynamics Branch

Coastal and Estuarine Fishery Resources Investigation

CONTACT: Wendy Gabriel NEC, Woods Hole

OBJECTIVE

Develop information on the present and likely future status of coastal and estuarine fishery resources in the Northeast.

ANTICIPATED ACTIVITIES IN FY90

1. Update stock assessments for assigned species and provide current scientific information for estuarine winter flounder, bluefish, black sea bass, striped bass, and summer flounder.
2. Assist SEFC with assessment of large pelagics, such as swordfish and bluefin tuna.
3. Prepare for and participate in semi-annual Stock Assessment Workshops.
4. Review P.L. 88-309 and 88-304 completions and proposal reports, draft Fishery Management Plans, Chesapeake Bay Stock Assessment Committee proposals, NMFS Regional Office and Headquarters proposals, and journal manuscripts.
5. Provide assistance to implementing NEFC data collection.
6. Review and evaluate adequacy of 1989 commercial biological sampling activities, and develop 1990 commercial sampling requirements, including port sampling and sea sampling, for the Fisheries Statistics Investigation.
7. Participate in the scientific crew of the NEFC survey program.
8. Coordinate and participate in salmon tag recovery program in Greenland and Canada.
9. Provide technical information to regional Fishery Management Councils.
10. Participate in activities of: Scientific and Statistical Committees of MAFMC and ASMFC; Chesapeake Bay Stock Assessment Technical Advisory Group; Short-Nosed Sturgeon Recovery Team; ICES Statutory Meeting and Atlantic Salmon Working Group; North Atlantic Salmon Conservation Organization working groups; and annual meeting of International Commission for the Conservation of Atlantic Tuna and chair the Scientific Committee.
11. Revise the summer flounder and black sea bass stock assessments.
12. Develop and improve methods for stock assessment.
13. Review age structured assessment methods used at NEFC to determine the utility of methods developed in other laboratories to our problems.
14. Conduct research to determine the interception rate of US origin Atlantic salmon by foreign fisheries in Canada and Greenland waters.
15. Monitor contract for salmon tag recovery in US rivers.
16. Conduct research on Atlantic salmon stock identification.
17. Conduct research on fisheries technical interactions.
18. Plan project on Mid-Atlantic mixed species trawl and recreational fisheries for scup, black sea bass, and summer flounder to predict effects of management options.

ANTICIPATED PRODUCTS IN FY90

1. Sections for *Status of the Fishery Resources off the Northeastern United States* NOAA Technical Memorandum.
2. Contribution to North Atlantic Fishery Organization U.S. Research Report for 1989.
3. Field study jointly with state of Massachusetts biologists on mortality due to recreational hooking and release.

4. Manuscript assessing the performance of Shepherds Length Composition Analysis using northern shrimp as an example.

5. Yield-per-recruit model for species with complex life histories.

6. Working papers with results of recent research on stock identification and on catch and tag recovery statistics for ICES North Atlantic Salmon Working Group.

Conservation and Utilization Division
Population Dynamics Branch

Emergency Striped Bass Research Study

CONTACT: Anne Richards NEC, Woods Hole

OBJECTIVE

Obtain information on the status of striped bass juvenile and adult stocks, and research conducted to identify causes of the decline; and develop additional information required for making management decisions.

ANTICIPATED ACTIVITIES IN FY90

1. Review research proposals, progress reports, and final reports of ESBS contracts.
2. Organize and chair annual Emergency Striped Bass Research Study Workshop.
3. Conduct research to develop stock identification methods for striped bass, based on scale shape.
4. Begin research to evaluate statistical properties and predictive power of alternative indices of juvenile striped bass abundance.
5. Participate in semi-annual meetings of Emergency Striped Bass Research Planning and Coordination Group.

ANTICIPATED PRODUCTS IN FY90

1. Emergency Striped Bass Research Study Workshop.
2. Report to Congress on the ESBS.

Conservation and Utilization Division
Resource Utilization Branch

Fisheries Technology Investigation

CONTACT: Burton Tinker NEC, Gloucester

OBJECTIVE

Develop and provide information on the wholesomeness, quality and safety of U.S. seafood products with the purpose of educating the U.S. consumers and industry, and contributing to the assurance of the quality of these products in the competitive world market.

ANTICIPATED ACTIVITIES IN FY90

1. Conduct experiments on production of fish hydrolysates from fatty fish waste after removal of the oil.
2. Determine nutrient value of liquid fish produced from fish wastes.
3. Produce fish hydrolysates from squid and fatty fish wastes for testing agricultural crops.
4. Conduct frozen storage studies on selected commercial species for "high quality" shelf life studies.
5. Technology transfer to industry, Sea Grant, and fishery development foundations.

ANTICIPATED PRODUCTS IN FY90

1. Report on experiments on producing fish hydrolysates from fatty fish waste after oil removal.
2. Edibility characteristics of fish species contribution to the national data base.

Conservation and Utilization Division
Resource Utilization Branch

Fisheries Chemistry Investigation

CONTACT: Joseph Licciardello NEC, Gloucester

OBJECTIVE

Develop and provide information on the wholesomeness, quality, and safety of U.S. seafood products with the purpose of educating the U.S. consumers and industry, and contributing to the assurance of the quality of these products in the competitive wold market.

ANTICIPATED ACTIVITIES IN FY90

1. Continue studies on application of monoclonal antibodies to the identification of fish and shellfish.
2. Initiate study to determine "high quality" shelf life of frozen seafoods.
3. Study the effect of antioxidants on freezer storage stability of mackerel fillets.
4. Develop selenium methodology.
5. Analyze fish/shellfish tissue samples for polynuclear hydrocarbons, chlorinated pesticides, and PCBs collected in the northeast.
6. Confirm the presence of suspected carcinogenic/mutagenic compounds in selective extracts by gas chromatograph/mass spectrometer.
7. Investigate new methodology for rapid more efficient analysis of organic contaminants.

ANTICIPATED PRODUCTS IN FY90

1. Draft manual for standardized testing of seafood quality.
2. Manuscript on sodium uptake in fish fillets due to brine processing.
3. Assessment of the degree of oxidative rancidity during storage of selected species.
4. Manuscript on effect of processing on Maine sardines.

National Systematics

CONTACT: Bruce Collette

NEC, Washington, D.C.

OBJECTIVE

Lay a foundation for species identification of crustaceans, squids, and fishes so that species harvested or important in the ecosystem can be correctly identified.

ANTICIPATED ACTIVITIES IN FY90

1. Continue revision of Fishes of the Gulf of Maine.
2. Continue revision of tonguefishes.
3. Continue clupeoid studies with work on Gulf of Mexico *Sardinella*.
4. Continue revision of western Atlantic mud shrimps.
5. Study deep-water crustaceans of Guam and the Mariannas Islands.
6. Continue cataloguing penaeoid shrimp genera and subgenera.

ANTICIPATED PRODUCTS IN FY90

1. Completed revisions of frigate tunas (*Auxis*), and double-lined mackerels (*Grammatorcynus*).
2. Publication on western Atlantic sand lance (*Ammodytes*).
3. Exhibit on lobsters in U.S. trade for lobby of National Museum of Natural History.
4. Publication of list of common and scientific names of North American decapod crustaceans.
5. Manuscript on the use of ontogenetic characters in cephalopod systematics.
6. Manuscript on shrinkage of preserved *Illex*.
7. Proceedings of cephalopod systematics symposium.
8. Manuscript on loliginid section of results of Cephalopod International Advisory Council Workshop.

Vessel Schedules and Contacts

Northeast Fisheries Center
Cruise Schedules for FY1990

Vessel	Base	Contact
R/V *Delaware II*	Woods Hole, MA	H.C. Boyar (508) 548-5123, x235 FTS 840-1235
R/V *Chapman*	Pascagoula, MS	"
R/V *Oregon II*	Pascagoula, MS	"
R/V *Kyma*	Sandy Hook, NJ	Andrew Draxler (201) 872-3000, x254 FTS 342-8254
R/V *Shang Wheeler*	Milford, CT	Anthony Calabrese (203) 783-4240 FTS 642-5240

Cruise schedules included in this publication are tentative and subject to change.

R/V *Delaware* II FY 1990

Cruise Number	No. of Days	Investigation	Cruise Period
89-06 (II)	12	Autumn Bottom Trawl Survey	Oct 2-13
89-06 (III)			Oct 16-27
89-07	12	Larval Herring Survey	Oct 30-Nov 10
89-08	10	Skate Feeding Study (UMA)	Nov 13-22
89-09 (I)	12	Larval Herring/Sand Lance Survey	Nov 27-Dec 8
89-09 (II)	9		Dec 11-19
90-01	16	Larval Herring/Sand Lance Survey	Jan 4-19
90-02	12	Trawl Door Testing	Jan 29-Feb 9
90-03	11	O-Group Herring Survey	Feb 20-Mar 2
90-04 (I)	19	Spring Bottom Trawl Survey	Mar 5-23
90-04 (II)	12		Mar 26-Apr 6
90-04 (III)	10		Apr 9-18
90-05	12	Larval Herring/Sand Lance Condition Survey	Apr 29-May 4
90-06	12	Mackerel Feeding Study	May 7-18
	(75)	**MAJOR SHIPYARD REPAIR**	
90-07	12	Food Habits Study	Aug 6-17
90-08	8	Open Ocean Dumping (UCT)	Aug 21-28
90-09 (I)	19	Autumn Bottom Trawl Survey	Sep 10-28

R/V *Chapman* FY 1990

No. of Days	Investigation	Cruise Period
9	Travel	Jun 21-29
12	Food Habits Study	Jul 2-13
12	Harbor Porpoise Survey	Jul 16-27
12	Jul 30-Aug 10	
9	Travel	Aug 13-21

R/V *Oregon* II FY 1990

No. of Days	Investigation	Cruise Period
8	Travel	Jul 17-24
10	Sea Scallop Survey	Jul 26-Aug 4
15		Aug 7-21
8	Travel	Aug 23-30

R/V *Kyma* FY 1990

No. of Days	Cruise Investigation	Period
3	Clam contaminants survey	Oct 2-4, 1989
2	Lamont Doherty suspended sediments	Oct 5-6
3	12-Mile Dumpsite	Oct 10,12,13
1	Lobster disease & tag	Oct 16
1	Water column	Oct 17
3	Flounder	Oct 23-25
2	12-Mile Dumpsite	Oct 26-27
1	Lobster disease & tag	Oct 30
2	Core, water column	Oct 31-Nov 1
4	12-Mile Dumpsite	Nov 6-9
5	Lobster disease & tag	Nov 13-17
1	Water column	Nov 21
1	Lobster disease & tag	Nov 27
4	Scallops	Nov 28-Dec 1
1	12-Mile Dumpsite	Dec 4
1	Scallops	Dec 7
1	Rutgers Sea Grant	Dec 11
1	Oyster contamination certification maintenance	Dec 12
1	Diving	Dec 14
1	Water column	Dec 19
3	Lobster disease & tag	Dec 26-28

R/V *Shang Wheeler* FY 1990

The R/V *Shang Wheeler* sails from the Milford Laboratory in Milford, CT into various areas of Long Island Sound approximately 160 to 180 days per year. The frequency and station locations are determined by program needs. The trips are almost always 10 hours or less in duration, although the vessel will occasionally tie-up overnight at the extreme ends of the Sound for special projects lasting two or three days.

Oct - Nov	Winter flounder collections (biological studies) Hard clam studies (recruitment)
Dec - Mar	Winter flounder collections (reproductive success)
Apr - May	Lobster collections (reproductive success)
Jun - Aug	Hard clam experiments (recruitment)

NEFC Publications 1988

PUBLICATIONS IN PEER-REVIEWED MEDIA

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Almeida, S.P., R.W. Wygant, A. JEARLD, JR., and J.A. PENTTILA. 1987. Optical Fourier transform characterization of fish scale age. *Appl. Opt.* 26(12): 2299-2305.

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Barnthouse, L.W., J. BOREMAN, T.L. Englert, W.L. Kirk, and E.G. Horn. 1988. Hudson River settlement agreement: technical rationale and cost consideration. Pages 267-273 *in* L.W. Barnthouse, R.J. Klauda, D.S. Vaughn, and R.L. Kendall, eds. Science, law, and Hudson River power plants: a case study in environmental impact assessment. Amer. Fish. Soc. Monogr. 4.

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NEFC Data Directory

Listing of Data Sets by Data Groups

DATA GROUP	DATA SET NAME
NERFIS-DATA	NE REGIONAL FISHERIES INFO SYSTEM DB
ADMIN	ADMINISTRATIVE SUPPORT
FRS-FINANCL	FINANCIAL REPORTING SYSTEM (FRS)
FRS-FISCAL-YR	FRS FISCAL YEAR MODULES
FRS-FY-OPS	FRS FY OPERATIONS
BIO-ENV	BIOENVIRONMENTAL
RESEARCH-CRU	RESEARCH CRUISE
BT-SURVEY	BOTTOM TRAWL SURVEY CRUISE
FOOD-HABITS	FOOD HABITS STOMACH CONTENTS
OFF-SHORE-SV	OFF SHORE GROUNDFISH SURVEYS
IN-SHORE-SV	IN SHORE GROUNDFISH SURVEYS
SHELLFISH-SV	SHELLFISH SURVEYS
SHRIMP-SV	SHRIMP SURVEY
SURV-AGE	BOTTOM TRAWL SURVEY AGE DATA
SURV-MATUR	BOTTOM TRAWL SURVEY MATURITY DATA
CRUISE-DESC	RESEARCH CRUISE SUPPORT FILES
MAN-UNDERSEA	MAN UNDERSEA OBSERVATIONS (MURT)
OCEAN-MONITR	OCEAN MONITORING SURVEYS (NEMP/PULSE)
BENECO-DATA	NEMP: BENTHIC ECOLOGY DATA
BIOCHEM-DATA	NEMP:BIOCHEMISTRY DATA
BOXYCON-DATA	NEMP: SEABED OXYGEN CONSUMPTION DATA
CALORIM-DATA	NEMP: BENTHIC CALORIMETRY DATA
CHLORO-DATA	NEMP: CHLOROPHYLL DATA
HYDROGR-DATA	NEMP: HYDROGRAPHIC LOG DATA
MICRBIO-DATA	NEMP: MICROBIOLOGY DATA
NUTCHEM-DATA	NEMP: NUTRIENT CHEMISTRY DATA
PHYSIOL-DATA	NEMP: PHYSIOLOGY DATA
PHYTO-DATA	NEMP: PHYTOPLANKTON DATA
PLATFRM-DATA	NEMP: BRIDGE LOG FILE-PLATFORM
PRIPROD-DATA	NEMP: PRIMARY PRODUCTIVITY DATA
WATCOL-DATA	NEMP: WATER COLUMN RESPIRATION DATA
CATCH EFFORT	CATCH EFFORT DATA
FOREIGN-CTCH	FOREIGN COMMERCIAL CATCH-EFFORT
REC-FISH	RECREATIONAL FISHERIES DATA
U.S.CATCH-EF	U.S. COMMERCIAL FISHERIES
BIO-SAMPLES	COMMERCIAL AGE AND LENGTH SAMPLES
AGE-SAMPLES	COMMERCIAL AGE SAMPLES
LENGTH-SAMP	COMMERCIAL LENGTH SAMPLES
COM-LANDINGS	COMMERCIAL LANDINGS
INTERVIEWS	LANDINGS INTERVIEW DATA
JOINT-VENT	US-FOREIGN JOINT VENTURE DATA
MAINE-SARDNE	MAINE SARDINE FISHERIES
SARDINE-CE	MAINE SARDINE CATCH EFFORT
SARDINE-SAMP	MAINE SARDINE SAMPLES
STATE-BULLTN	STATE BULLETIN LANDINGS DATA
STATE-BUL-MO	STATE BULLETIN MONTHLY LANDINGS DATA
STATE-BUL-YR	STATE BULLETIN YEARLY LANDINGS DATA
SEA-SAMPLING	SEA SAMPLING OBSERVATIONS

WEIGHOUTS	LANDINGS WEIGHOUT DATA
INDUST-SAMP	INDUSTRIAL SAMPLES DATA
WEIGHOUT-DET	COMMERCIAL WEIGHOUT DETAIL DATA
WEIGHOUT-SUM	COMMERCIAL WEIGHOUT SUMMARIZED DATA
OCEAN-SHELL	OCEAN SHELLFISH LOGBOOKS
OPERTNG-UNIT	OPERATING UNITS
CG-VESS-FILE	COAST GUARD VESSEL FILE
MSTR-VESS	MASTER VESSEL DATA
NERP-VESS	NERPS VESSEL FILES
VESSEL-LOGS	VESSEL LOGBOOKS FOR REGULATED SPEC
DATA-MANAGE	DATA MANAGEMENT SUPPORT
NERDOC-DATA	NE REGIONAL DOCUMENTATION SYSTEM
NERREPS-DATA	NORTHEAST REGIONAL REPORTS SYSTEM
LEGAL-ENFCMT	LEGAL ENFORCEMENT
ENFORCE-PLAN	ENFORCEMENT OF MANAGEMENT PLANS
EMIS-DATA	ENFORCEMENT MANAGEMENT INFO SYSTEM
NERCEMS-DATA	NE REG CATCH & EFFORT MANAGEMENT SYS
NERENS-DATA	NE REGIONAL ENFORCEMENT SYSTEM
NERPS-DATA	NE REGIONAL PERMIT SYSTEM
FOREIGN-C/E	FOREIGN CATCH/EFFORT DATA
CAMS-DATA	CATCH AND ALLOCATION MONITORING SYS
FOBOC-DATA	FOREIGN OBSERVER COST SYSTEM DATA
NERODS-DATA	NE REGIONAL OBSERVER DATA
TECHNCL-DATA	TECHNICAL QUALITY PROCESSING OF FISH
PCB-SHELLFSH	PCB-HYDROCARBONS IN SHELLFISH/CRABS
TREAT-QUALTY	STORAGE TREATMENTS VS FISH QUALITY

DATA SET: ADMINISTRATIVE SUPPORT
CODE: 106
ABBREV: ADMIN
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: These data sets support the Center and laboratory administrative functions. Includes the Financial Reporting System (FRS) which tracks labor and other expenses against budget plan.
LAB: NE
CONTACT: LAIRD, M.

DATA SET: BIOENVIRONMENTAL
CODE: 101
ABBREV: BIO-ENV
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: The source of this data separates it from other NMFS biological and environmental measurements: planned, scientific experiments, mostly with research survey cruises as the platform. Species catch composition, age, length, environment, chemical, oceanographic, stress, migration.
LAB: NE
CONTACT: HEYERDAHL, E.

DATA SET: BOTTOM TRAWL SURVEY CRUISE
CODE: 201
ABBREV: BT-SURVEY
SYSTEM: RESEARCH CRUISE
ABSTRACT: Groundfish survey cruises since 1963, offshore and inshore, follow stratified random sampling. U.S. vessels Albatross, Delaware, and joint surveys with other nations. Species catch composition, weight, number, length distribution by tow. Age samples, some species. Tow environment. Some stomachs. (Other experiments by special request, automated with this data set.)
LAB: WH
CONTACT: AZAROVITZ, T.

DATA SET: CATCH AND ALLOCATION MONITORING SYS
CODE: 503
ABBREV: CAMS-DATA
SYSTEM: FOREIGN CATCH/EFFORT DATA
ABSTRACT: Files contain catch/effort data reported by designated foreign officers, the NMFS Observer Program and NMFS/USGC enforcement officers. These files also contain foreign allocation and fishing area data. This data supports two tasks: 1) monitoring the progress of the fisheries and assessing the effectiveness of management measures. (Nationally coordinated.) LAB: WH
CONTACT: GERRIOR, P.

DATA SET: CATCH EFFORT DATA
CODE: 102
ABBREV: CATCH EFFORT
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: The source of this data separates it from other NMFS biological data: commercial fisheries catch and effort statistics, from U.S. and foreign fleets. Subsets include Northeast and Mid-Atlantic ports, Maine sardine fishery, logbooks for regulated species, operating units (vessels) characteristics, and foreign reporting. Variables include species type, catch, value, effort, area and time fished. Length, age, industrial samples. In general, data automated since 1964.
LAB: WH
CONTACT: CHRISTENSEN, D.

DATA SET: COAST GUARD VESSEL FILE
CODE: 255
ABBREV: CG-VESS-FILE
SYSTEM: OPERATING UNITS
ABSTRACT: This is the USCG file of registered merchant vessel information. Data includes vessel identification and characteristics for all merchant vessels, fishing or otherwise, over 5 gross tons in the United States.
LAB: DC
CONTACT: PALMER, J.

DATA SET: COMMERCIAL AGE SAMPLES
CODE: 260
ABBREV: AGE-SAMPLES
SYSTEM: COMMERCIAL LENGTH AND AGE SAMPLES
ABSTRACT: Contains number of catch per age interval at length and sex of commercial samples. Data includes catch characteristics such as date, area, gear depth, tonclass, and landed port. Catches from 1969 to present in the Northwest Atlantic are in the automated files.
LAB: WH
CONTACT: PALMER, J.

DATA SET: COMMERCIAL LANDINGS
CODE: 246
ABBREV: COM-LANDINGS
SYSTEM: U.S. COMMERCIAL FISHERIES

ABSTRACT: Contains weight, value, effort and other catch characteristics of commercial landings in the Northeast region. Data is maintained at various levels of detail from the actual fishing vessel's activity in a particular area to aggregation of a species catch to a state.
LAB: WH
CONTACT: PALMER, J.

DATA SET: COMMERCIAL LENGTH AND AGE SAMPLES
CODE: 253
ABBREV: BIO-SAMPLES
SYSTEM: U.S. COMMERCIAL FISHERIES
ABSTRACT: Contains length and age-at-length data obtained from random samples of commercially caught fish. Data includes age, length, and sex for landed species by area and gear. Species sampled include cod, haddock, pollock, redfish, hake, flounders, herring, mackerel, squid, and shellfish. Automated data is back to 1969.
LAB: WH
CONTACT: PALMER, J.

DATA SET: COMMERCIAL LENGTH SAMPLES
CODE: 261
ABBREV: LENGTH-SAMP
SYSTEM: COMMERCIAL LENGTH AND AGE SAMPLES
ABSTRACT: Contains number of catch per length interval by sex of commercial samples. Includes catch characteristics such as date, area, gear, depth, ton-class, number of males and number of females in sample, and total sample numbers and weights. Data goes back to 1969.
LAB: WH
CONTACT: PALMER, J.

DATA SET: COMMERCIAL WEIGHOUT DETAIL DATA
CODE: 262
ABBREV: WEIGHOUT-DET
SYSTEM: LANDINGS WEIGHOUT DATA
ABSTRACT: Contains detailed catch and effort information collected through the N.E. Regional Weighout System. This is the detail subset of the weighout data. Catch volume and value for each species is kept by vessel subtrips (vessel, gear, depth fished, area, and date.
LAB: WH
CONTACT: PALMER, J.

DATA SET: COMMERCIAL WEIGHOUT SUMMARIZED DATA
CODE: 263
ABBREV: WEIGHOUT-SUM
SYSTEM: LANDINGS WEIGHOUT DATA
ABSTRACT: Contains summarized catch effort information collected through the N.E. Regional Weighout System. Catch volume and value are summed across days in the month, vessel within ton class and market category within species. Resulting levels of aggregation are catch and value by month, port, gear ton class, area and species. Data goes back to 1966.
LAB: WH
CONTACT: PALMER, J.

DATA SET: DATA MANAGEMENT SUPPORT
CODE: 107
ABBREV: DATA-MANAGE
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: Includes NEDESC (Northeast Description), on-line documentation files, software source and executable modules, computer system usage statistics, and other data used to manage NERFIS.
LAB: NE
CONTACT: HEYERDAHL, E.

DATA SET: ENFORCEMENT MANAGEMENT INFO SYSTEM
CODE: 504
ABBREV: EMIS-DATA
SYSTEM: ENFORCEMENT OF MANAGEMENT PLANS
ABSTRACT: EMIS data files contain violation, sighting, foreign permit, foreign check-in and check-out, and enforcement personnel data. Data are used as a reference in several data entry, data editing, and summary report programs. Programs produce ad hoc and summary reports for enforcement, management and the public constituency. (Nationally coordinated)
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: ENFORCEMENT OF MANAGEMENT PLANS
CODE: 521
ABBREV: ENFORCE-PLAN
SYSTEM: LEGAL ENFORCEMENT
ABSTRACT: Data to support enforcement of fisheries management plans. Violation, sighting, foreign permit, foreign check-in/out data related to effort-restrictive matters.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: FINANCIAL REPORTING SYSTEM
CODE: 130
ABBREV: FRS-FINANCL
SYSTEM: ADMINISTRATIVE SUPPORT

ABSTRACT: Data used by FRS to monitor budgeted spending in NEFC. Lab, division, task, CYOP levels. Commitments, encumbrances, labor, personnel, tasks, budget plan.
LAB: WH
CONTACT: LAIRD, M.

DATA SET: FOOD HABITS STOMACH CONTENTS
CODE: 202
ABBREV: FOOD-HABITS
SYSTEM: BOTTOMTRAWL SURVEY CRUISE
ABSTRACT: Stomachs have been collected on survey cruises since 1963, in three separate studies. The contents are analyzed for prey species type and count. Twenty-eight major predators, limited data on total 104. There is a different file structure for each of the three studies.
LAB: WH
CONTACT: MICHAELS, W.

DATA SET: FOREIGN COMMERCIAL CATCH-EFFORT
CODE: 245
ABBREV: FOREIGN-CTCH
SYSTEM: CATCH EFFORT DATA
ABSTRACT: This data set is not yet automated.
LAB: WH
CONTACT: PALMER, J.

DATA SET: FOREIGN OBSERVER COST SYSTEM DATA
CODE: 505
ABBREV: FOBOC-DATA
SYSTEM: FOREIGN CATCH/EFFORT DATA
ABSTRACT: Foreign observer cost system data files contain observer deployment and cost data as provided by regional observer programs. (Nationally coordinated.)
LAB: WH
CONTACT: GERRIOR, P.

DATA SET: FOREIGN CATCH/EFFORT DATA
CODE: 520
ABBREV: FOREIGN-C/E
SYSTEM: LEGAL ENFORCEMENT
ABSTRACT: Catch/effort data reported by designated foreign officials, NMFS observer program and NMFS/USCG enforcement officials. Foreign allocation and fishing area data C/E data reported by vessels and/or processors/dealers.
LAB: WH
CONTACT: GERRIOR, P.

DATA SET: FRS FISCAL YEAR MODULES
CODE: 131
ABBREV: FRS-FISCAL-YR
SYSTEM: FINANCIAL REPORTING SYSTEM
ABSTRACT:
LAB: WH
CONTACT: LAIRD, M.

DATA SET: FRS FY OPERATIONS
CODE: 132
ABBREV: FRS-FY
SYSTEM: FRS FISCAL YEAR MODULES
ABSTRACT:
LAB: WH
CONTACT: LAIRD, M.

DATA SET: INSHORE GROUNDFISH SURVEYS
CODE: 204
ABBREV: IN-SHORE-SV
SYSTEM: BOTTOM TRAWL SURVEY CRUISE
ABSTRACT: Inshore groundfish surveys cover area from Cape Ann, MA to Cape Fear, N.C., depths approximate, from 5 to 15 fathoms. Seasonal cruises on regular basis since 1972 species catch composition: weight, number at length, age, each tow. Environmental data also by tow. Seasonal cruises.
LAB: WH
CONTACT: AZAROVITZ, T.

DATA SET: INDUSTRIAL SAMPLES DATA
CODE: 252
ABBREV: INDUST-SAMP
SYSTEM: LANDINGS WEIGHOUT DATA
ABSTRACT: Volume, species composition, and catch characteristics of samples of commercial landings sold as industrial for reduction. Data includes fishing effort date location, gear used, port landed, and depth of catch.
LAB: WH
CONTACT: PALMER, J.

DATA SET: LANDINGS INTERVIEW DATA
CODE: 250
ABBREV: INTERVIEWS
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT: Contains detailed catch and effort information obtained from interviews with fishing vessel captains upon landing. Includes weight and number caught, days fishing effort expended by area to minute squares, and catch characteristics such as vessel identification, ton class, depth, port of landing, number and average duration of tows, and mesh size. Most of these data are identical to those on the weighout detail except for more detailed location, depth, days absent, and time of day data and hail. Data goes back to 1971.
LAB: WH
CONTACT: PALMER, J.

DATA SET: LANDINGS WEIGHOUT DATA
CODE: 249
ABBREV: WEIGHOUTS
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT: Contains detailed and summarized catch and effort information regarding all commercially landed catches obtained by the N.E. Regional Weighout System since 1964. Data includes number and weight of each species caught for vessel trips by subtrips. The basic collection unit of subtrips is defined as a particular vessel fishing area, gear, depth, landing date, combination identifying data consist of landing port, vessel ton class, main species sought, and total subtrip catch. The several data files that make up this group contain different levels of aggregation of the basic collection units.
LAB: WH
CONTACT: PALMER, J.

DATA SET: LEGAL ENFORCEMENT
CODE: 104
ABBREV: LEGAL-ENFCMT
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: This data is maintained by the Northeast Regional Office to support the enforcement of fisheries management plans involving foreign nations. Includes participation in national level data for catch-allocations (CAMS) enforcement (EMIS). Observers on foreign vessels.
LAB: RO
CONTACT: ROE, R.

DATA SET: MAINE SARDINE CATCH EFFORT
CODE: 247
ABBREV: SARDINE-CE
SYSTEM: MAINE SARDINE FISHERIES
ABSTRACT: Contains catch effort information for the Maine herring fishery. Data includes catch date, location, volume, gear used, plant sold to and number of cases processed.
LAB: WH
CONTACT: ANTHONY, V.

DATA SET: MAINE SARDINE FISHERIES
CODE: 241
ABBREV: MAINE-SARDNE
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT: Sardine (herring) catch effort information is obtained under agreement with the Maine Department of Marine Resources. Landings, effort, and age and length biological sample data is maintained on tape files at the Woods Hole Lab.
LAB: WH
CONTACT: ANTHONY, V.

DATA SET: MAINE SARDINE SAMPLES
CODE: 248
ABBREV: SARDINE-SAMP
SYSTEM: MAINE SARDINE FISHERIES
ABSTRACT: Contains biological age-length samples of Maine herring. Data includes date and location of catch, age, length, and various physical dimensions of the fish.
LAB: WH
CONTACT: ANTHONY, V.

DATA SET: MAN UNDERSEA OBSERVATIONS
CODE: 208
ABBREV: MAN-UNDERSEA
SYSTEM: RESEARCH CRUISE
ABSTRACT: This data set comprises photos of fish communities taken at assorted locations, usually coordinated with survey stations at which other experiments were conducted. When automated, will contain counts by species.
LAB: WH
CONTACT: SHERMAN, K.

DATA SET: MASTER VESSEL DATA
CODE: 256
ABBREV: MSTR-VESS
SYSTEM: OPERATING UNITS
ABSTRACT: Contains information about fishing vessels whose catch has been entered into the weighout system since approximately 1972. Data includes identification, home port, size, age, gear, horsepower, and limited fishing activity data.
LAB: WH
CONTACT: PALMER, J.

DATA SET: NE REG CATCH & EFFORT MANAGEMENT SYS
CODE: 506
ABBREV: NERCEMS-DATA
SYSTEM: ENFORCEMENT OF MANAGEMENT PLANS
ABSTRACT: NERCEMS data files contain catch/effort data reported by vessel and/or by processors/dealers. They contain data relating to effort-restrictive measures. The data support the status of managed fisheries for enforcement and management and are used for assessing effectiveness of management.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: NE REGIONAL DOCUMENTATION SYSTEM
CODE: 501
ABBREV: NERDOC-DATA
SYSTEM: DATA MANAGEMENT SUPPORT
ABSTRACT: Document the variables files and systems contained within the Regional Office component of the Northeast Regional Fisheries Information System. The system consists of a file for each level of the data base structure (variables, files, systems) and of files used for cross-referencing between levels of the structure. Programs are used for editing, entry, and reporting documentation material.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: NE REGIONAL ENFORCEMENT SYSTEM
CODE: 507
ABBREV: NERENS-DATA
SYSTEM: ENFORCEMENT OF MANAGEMENT PLANS
ABSTRACT: Data collected by NMFS/USCG enforcement officers during boardings of fishing vessels and during shoreside activities. They contain data relative to the conduct of regional enforcement activities. For data outside the purview of EMIS.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: NE REGIONAL FISHERIES INFO SYSTEM DB
CODE: 100
ABBREV: NERFIS-DATA
SYSTEM:
ABSTRACT: Automated data sets cover all NMFS data in Northeast Center and Region under purview of regional database manager, with responsibility to protect, archive, and make available to authorized investigators. Data is in seven categories: bioenvironment catch/effort, socio-economic, legal-enforcement, enforcement, technical, administrative, and data management.
LAB: NE
CONTACT: HEYERDAHL, E.

DATA SET: NE REGIONAL OBSERVER DATA
CODE: 508
ABBREV: NERODS-DATA
SYSTEM: FOREIGN CATCH/EFFORT DATA
ABSTRACT: Summarized catch data from observers aboard foreign vessels. Data originates from each deployment, general deployment data, deployment cost data, and observer program personnel data.
LAB: WH
CONTACT: GERRIOR, P.

DATA SET: NE REGIONAL PERMIT SYSTEM
CODE: 509
ABBREV: NERPS-DATA
SYSTEM: ENFORCEMENT OF MANAGEMENT PLANS
ABSTRACT: NERPS data for permitted domestic fishing vessels as required by federal regulations. Data files contain names and addresses of vessel owners, vessel characteristics, and fisheries for which vessels are permitted. Data are used as reference by domestic catch entry, enforcement, and summary report programs. Programs produce reports for management and enforcement and they produce federal fisheries permits and mailing lists.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: NEMP: BENTHIC CALORIMETRY DATA
CODE: 408
ABBREV: CALORIM-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: SH
CONTACT: WILK, S.

DATA SET: NEMP: BENTHIC ECOLOGY DATA
CODE: 411
ABBREV: BENECO-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: Benthic ecology data include values necessary for the computation of species abundance and vital statistics for benthic organisms. The key to linking other research data to benthic ecology is CRUISE. CRUISE is a composite of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM, and CRUISE-STA. A unique combination of values for these element is recorded each time a ship stops to allow sampling. Each cruise is accompanied by one set of BENECO-INFO. LAB: SH
CONTACT: REID, R.

DATA SET: NEMP: BIOCHEMISTRY DATA
CODE: 406
ABBREV: BIOCHEM-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: MI
CONTACT: THURBERG, F.

DATA SET: NEMP: BRIDGE LOG FILE-PLATFORM
CODE: 403
ABBREV: PLATFRM-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: The bridge log of a ship contains data relative to the time, location, and environment of each sampling effort: these data are recorded each time a vessel stops to allow samples to be taken. In addition, data describing fishing effort are recorded. The bridge log data (time and location) are of interest to all research activities that occur concomitantly with a particular ship's movements. CRUISE is the key to linking other research data to bridge log data. It is a composite of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM AND CRUISE-STA. Each cruise is accompanied by one set of PLATFORM-INFO data and one or more sets of TRAWL INFO data. Each set of TRAWL-INFO is uniquely identified by CRUISE and TRAWL-NUM.
LAB: SH
CONTACT: STEIMLE, F.

DATA SET: NEMP: CHLOROPHYLL DATA
CODE: 404
ABBREV: CHLORO-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: Chlorophyll data include the instrument reading, calibration and reagent values necessary for the calculation of volumetric plant pigment values. These data are collected in conjunction with nutrient chemistry, primary productivity, and hydrographic log data: the four identical values for CRUISE and DEPTH represent synoptic samples. The key to linking chlorophyll data with other research is CRUISE. CRUISE is a composite of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM AND CRUISE-STA. A unique combination of values for these elements is recorded each time a ship stops to allow samples. Each cruise is accompanied by one set of CHLORO-INFO DATA. Chlorophyll data are linked by DEPTH and by CRUISE to hydrographic log and nutrient chemistry data, and linked by DEPTH and FRACTION to primary productivity data. It should be noted that there is a one-to-one correspondence among the respondence; among depths is not one-to-one; e.g., only some of the HYDRO-DEPTH values correspond to CHLORO-DEPTH values. LAB: SH
CONTACT: ZETLIN, C.

DATA SET: NEMP: HYDROGRAPHIC LOG DATA
CODE: 415
ABBREV: HYDROGR-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: SH
CONTACT: WILK, S.

DATA SET: NEMP: MICROBIOLOGY DATA
CODE: 409
ABBREV: MICRBIO-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: MI
CONTACT: Thurberg, F.

DATA SET: NEMP: NUTRIENT CHEMISTRY DATA
CODE: 414
ABBREV: NUTCHEM-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: SH
CONTACT: WILK, S.

DATA SET: **NEMP: PHYSIOLOGY DATA**
CODE: 407
ABBREV: PHYSIOL-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: MI
CONTACT: THURBERG, F.

DATA SET: **NEMP: PHYTOPLANKTON DATA**
CODE: 410
ABBREV: PHYTO-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: Phytoplankton data include values necessary for the calculation of species abundance of phytoplankton organisms. The key to linking other research data to phytoplankton data is CRUISE. CRUISE is a combination of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM and CRUISE-STA. A unique combination of values for these elements is recorded each time a ship stops to allow sampling. Each cruise is accompanied by one set of PHYTO-INFO data, thus: PHYTO-INFO is composed of CRUISE, PHYTO-STA, AND PHYTO-CONFAC. For each cruise the number of species (PHYTO-SP) are counted in replicate plankton samples (PHYTO-REP). Each unique combination of cruise PHYTO-REP and PHYTO-SP is accompanied by one set of PHYTO-VALUES, thus: PHYTO VALUES is composed of PHYTO-REP count.
LAB: SH
CONTACT: WILK, S.

DATA SET: **NEMP: PRIMARY PRODUCTIVITY DATA**
CODE: 405
ABBREV: PRIPROD-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: Primary productivity data include radioactive disintegration counts and reagent fixing necessary for the calculation of a real fixation of carbon by marine plants. These data are collected in conjunction with nutrient chemistry data. The four identical values for cruise and depth represent synoptic samples. The key to linking primary productivity data with other research data has been designated as CRUISE. CRUISE is a composite of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM and CRUISE-STA. A unique combination of values for these elements is recorded each time a ship stops to allow sampling. Each cruise is accompanied by one set of PRIPROD-INFO. Primary productivity data are linked by CRUISE and DEPTH to hydrographic log, nutrient chemistry and chlorophyll data. The correspondence of values for depth among these data sets is not one-to-one. For example, hydrographic depth values do not all have a corresponding primary productivity depth value. Because of the lack of exact correspondence among the depth data, unique names for this attribute have been assigned. Each unique combination of CRUISE and PRIPROD-DEPTH is accompanied by one set of PRIPROD-PARAMS data; physical, and chemical measurements in addition to CRUISE and DEPTH, productivity is linked to chlorophyll data by FRACTION. The values of FRACTION represent those filtrates of sea water upon which measurements are made. Although the three filtrates are the same for both data sets, they are represented differently as coded data: therefore, a unique name has been supplied for each data set. Primary productivity samples are collected in replicate, typically, two replicates at a time, (PRIPROD-REP) for each unique combination of the values for CRUISE, PRIPROD-DEPTH, PROD-FRACT, and PRIPROD-REP (one set of PRIPROD-VALUES is collected).
LAB: SH
CONTACT: O'REILLY, J.

DATA SET: **NEMP: SEABED OXYGEN CONSUMPTION DATA**
CODE: 413
ABBREV: BOXYCON-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: This data set is not yet automated.
LAB: SH
CONTACT: WILK, S.

DATA SET: **NEMP: WATER COLUMN RESPIRATION DATA**
CODE: 412
ABBREV: WATCOL-DATA
SYSTEM: OCEAN MONITORING SURVEYS NEMP/PULSE
ABSTRACT: Includes values that enable computation and interpretation of oxygen depletion rate in sea water. The key to linking other research data to water column respiration data is CRUISE. CRUISE is a composite of VESSEL IDENTIFICATION, YEAR, CRUISE-NUM, and CRUISE-STA. A unique combination of values for these elements is recorded each time a ship stops to allow sampling. Each cruise is accompanied by one set of WATCOL-INFO. Respiration is measured at multiple depths (WATCOL-DEPTH) for each cruise. Each unique combination of values for CRUISE and WATCOL-DEPTH is accompanied by one set of WATCOL-PARAMS, physical and chemical measurements, and one set of WATCOL-VALUES.
LAB: SH
CONTACT: PHOEL, W.

DATA SET: NERPS VESSEL FILES
CODE: 257
ABBREV: NERP-VESS
SYSTEM: OPERATING UNITS
ABSTRACT: This data set contains and entry for each permitted fishing vessel, with vessel characteristics.
LAB: GL
CONTACT: PALMER, J.

DATA SET: NORTHEAST REGIONAL REPORTS SYSTEM
CODE: 502
ABBREV: NERREPS-DATA
SYSTEM: DATA MANAGEMENT SUPPORT
ABSTRACT: NE Regional Report system data supports documentation of generation and distribution of standard NEREIS reports. Data files contain general information on each report, run instructions, NEREIS distribution lists, and format commands for standard title pages, title headings, and page headings. Programs produce reports listings, report descriptions, report run instructions, report distribution lists, and report tickler files.
LAB: RO
CONTACT: REIDMAN, R.

DATA SET: OCEAN SHELLFISH LOGBOOKS
CODE: 243
ABBREV: OCEAN-SHELL
SYSTEM: U.S. COMMERCIAL FISHERIES
ABSTRACT: Contains shellfish catch-effort data submitted by fishermen and landings data submitted by shellfish processors in a given year. Data includes catch date, effort, location, volume, gear used, port of landing, and purchasing company. Vessel logbooks for regulated species.
LAB: OX
CONTACT: BREY, W.

DATA SET: OCEAN MONITORING SURVEYS NEMP/PULSE
CODE: 402
ABBREV: OCEAN-MONITR
SYSTEM: RESEARCH CRUISE
ABSTRACT: Northeast Monitoring Program (NEMP) and ocean pulse data support ocean pollution monitoring at approximately 140 stations along the continental shelf from Cape Hatteras to the Gulf of Maine. Automated data files are being developed for data from bridge logs. Primary productivity, biochemical, physiologic, benthic, calorimetry, microbiology, phytoplankton, benthic ecology, water column respiration, seabed oxygen consumption, nutrient chemistry and hydrographic.
LAB: SH
CONTACT: WILK, S.

DATA SET: OFF SHORE GROUNDFISH SURVEYS
CODE: 203
ABBREV: OFF-SHORE-SV
SYSTEM: BOTTOMTRAWL SURVEY CRUISE
ABSTRACT: Offshore groundfish surveys cover area from Cape Fear (N.C.) to Nova Scotia in depths 27 m (15 fathoms) and over. Automated since 1963. U.S. and foreign research vessels. Species catch composition: weight, number at length, age, each tow. Environmental data also by tow. Seasonal cruises.
LAB: WH
CONTACT: AZAROVITZ, T.

DATA SET: OPERATING UNITS
CODE: 244
ABBREV: OPERTNG-UNIT
SYSTEM: U.S. COMMERCIAL FISHERIES
ABSTRACT: The various data files that make up this group contain information regarding the vessels that are currently or have previously engaged in commercial fishing in the Northwest Atlantic. Data includes vessel identification, characteristics, required crew, and limited data effort.
LAB: WH
CONTACT: PALMER, J.

DATA SET: PCB-HYDROCARBONS IN-SHELLFISH CRABS
CODE: 601
ABBREV: PCB-SHELLFSH
SYSTEM: TECHNICAL QUALITY PROCESSING OF FISH

ABSTRACT: PCB and hydrocarbon analysis on samples of crabs and shellfish. Analysis on local microcomputer, data archived with SEFC in Charleston, S.C. Sensitive nature of data requires special security.
LAB: GL
CONTACT: GADBOIS, D.

DATA SET: RECREATIONAL FISHERIES DATA
CODE: 800
ABBREV: REC-FISH
SYSTEM: CATCH EFFORT DATA

ABSTRACT: Catch effort data from Atlantic and Gulf intercepts of the Marine Recreational Fisheries Statistics Survey (MRFSS), for 1979-1986.
LAB: WH
CONTACT: Heyerdahl, E.

DATA SET: RESEARCH CRUISE
CODE: 120
ABBREV: RESEARCH-CRU
SYSTEM: BIOENVIRONMENTAL
ABSTRACT: Research cruise data has been automated since 1962. Groundfish surveys measure species composition, length, age, distribution, environment. Stomach samples. plankton, larval herring surveys, benthic communities, ocean monitoring, oceanographic surveys in more recent years.
LAB: NE
CONTACT: HEYERDAHL, E.

DATA SET: RESEARCH CRUISE SUPPORT FILES
CODE: 123
ABBREV: CRUISE-DESC
SYSTEM: RESEARCH CRUISE
ABSTRACT: These data sets provide the keys to relate the various subsets of research cruise data. Includes cruise descriptions; strata descriptions and definitions, species codes, names, L-W relationships; number of tows per cruise-stratum; age sample locator.
LAB: NE
CONTACT: HEYERDAHL, E.

DATA SET: SHELL FISH SURVEYS
CODE: 205
ABBREV: SHELLFISH-SV
SYSTEM: BOTTOM TRAWL SURVEY CRUISE
ABSTRACT: Shellfish surveys are of two types: quahogs and scallops. Conducted since 1976. Clams from Cape Hatteras, N.C. to Southern New England. Scallops from Cape Hatteras to W. Georges Bank. Catch in weight, length (mm), age, also environmental data. LAB: WH
CONTACT: AZAROVITZ, T.

DATA SET: SHRIMP SURVEY
CODE: 206
ABBREV: SHRIMP-SV
SYSTEM: BOTTOMTRAWL SURVEY CRUISE
ABSTRACT: A subset of offshore groundfish surveys and some shrimp-directed cruises. Covers area in W. Gulf of Maine. Automated since 1977. Length in tenths of millimeters, otherwise data structure as in groundfish surveys.
LAB: WH
CONTACT: CLARK, S.

DATA SET: STATE BULLETIN LANDINGS DATA
CODE: 251
ABBREV: STATE-BULLTN
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT: Consists of non-weighout landings data obtained from Washington's landing file for states not participating in the N.E. weighout program or from monthly and/or annual canvasses. Contains catch and value by month, dealer, gear used, and location caught. Other elements include water codes, price, distance from shore, Washington species code and NAFO codes. Data goes back to 1974.
LAB: WH
CONTACT: PALMER, J.

DATA SET: STATE BULLETIN MONTHLY LANDINGS DATA
CODE: 258
ABBREV: STATE-BUL-MO
SYSTEM: STATE BULLETIN LANDINGS DATA
ABSTRACT: Provisional non-weighout landings data received from Washington used as a supplement to the monthly weighout data. Contains catch and value by month, dealer, gear used, and locale of catch. Other data includes water codes, price, distance from shore, Washington and NAFO codes. Data presently includes (81) catches from N.Y., N.J., V.A. AND R.I., but as more states are brought into the weighout system, this data set will involve data from fewer states.
LAB: WH
CONTACT: PALMER, J.

DATA SET: STATE BULLETIN YEARLY LANDINGS DATA
CODE: 259
ABBREV: STATE-BUL-YR
SYSTEM: STATE BULLETIN LANDINGS DATA
ABSTRACT: The annual non-weighout landings data received from Washington. It represents catch information obtained in state and federal monthly and annual canvasses from those states not participating in the N.E. weighout program. Data includes catch volume and value by month, dealer, gear used, and locale of catch. Automated data goes back to 1974.
LAB: WH
CONTACT: Palmer, J.

DATA SET: STORAGE TREATMENTS VS FISH QUALITY
CODE: 602
ABBREV: TREAT-QUALTY
SYSTEM: TECHNICAL QUALITY PROCESSING OF FISH

ABSTRACT: Lab experiments measure the effects on fish quality caused by storage treatments. Treatments involve time, temperature, chemical additives, processing (*e.g.*, cooking), packaging. Quality measurements include taste tests, weight loss, moisture, chemical changes, use of replicates, control samples.
LAB: GL
CONTACT: KRZYNOWEK, J.

DATA SET: TECHNICAL QUALITY PROCESSING OF FISH
CODE: 105
ABBREV: TECHNCL-DATA
SYSTEM: NE REGIONAL FISHERIES INFO SYSTEM DB
ABSTRACT: Effect on quality of fish caused by various storage processing methods. Taste panels and chemical analysis.
LAB: GL
CONTACT: LEARSON, R.

DATA SET: U.S. COMMERCIAL FISHERIES
CODE: 240
ABBREV: U.S.CATCH-EF
SYSTEM: CATCH EFFORT DATA
ABSTRACT: U.S. commercial catch and effort from vessels landing fish in Northeast and Mid-Atlantic ports, automated since 1964. Vessel, port, area fished, gear, date, species, pounds, value, days fished, vessel characteristics. Area fished, Northwest Atlantic ICNAF divisions 5, 6, and 4.
LAB: WH
CONTACT: PALMER, J.

DATA SET: US-FOREIGN JOINT VENTURE DATA
CODE: 701
ABBREV: JOINT-VENT
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT:
LAB: WH
CONTACT: PALMER, J.

DATA SET: VESSEL LOGBOOKS FOR REGULATED SPEC
CODE: 242
ABBREV: VESSEL-LOGS
SYSTEM: U.S. COMMERCIAL FISHERIES
ABSTRACT: The automated portion of vessel logbooks. Consists of a log of logbooks received from vessels permitted to fish regulated species. Information including vessel identification and date of receipt of the logbook is maintained. The actual data from the logbooks are not maintained in an automated mode.
LAB: WH
CONTACT: PALMER, J.

DATA SET: BOTTOM TRAWL SURVEY AGE DATA
CODE: 210
ABBREV: SURV-AGE
SYSTEM: BOTTOM TRAWL SURVEY CRUISE
ABSTRACT: During NEFC resource surveys, scales and otoliths are routinely collected for age and growth studies. Age data files contain number per age at a given length, sex, and species. Data includes such catch characteristics as cruise-strata-tow, station, gear, date, and statistical area. Data exists from 1963 through 1989 in automated files.
LAB: WH
CONTACT: ALMEIDA, F.

DATA SET: BOTTOM TRAWL SURVEY MATURITY DATA
CODE: 211
ABBREV: SURV-MATUR
SYSTEM: BOTTOM TRAWL SURVEY CRUISE
ABSTRACT: During NEFC resource surveys, maturity observations are routinely taken to determine sex and maturity stage of the samples. Maturity data files contain age, maturity, length, species, and sex for each age sample analyzed. Data includes catch characteristics such as cruise-strata-tow, station, gear, data, and statistical area. Data exists from 1982 through 1989 in automated files. Data from earlier studies is also available in various formats.
LAB: WH
CONTACT: ALMEIDA, F.

DATA SET: SEA SAMPLING OBSERVATIONS
CODE: 254
ABBREV: SEA-SAMPLING
SYSTEM: COMMERCIAL LANDINGS
ABSTRACT: Sea sampling data is collected on a tow-by-tow basis on contract by agents onboard fishing vessels. Collection has begun with otter trawl catch/effort data. Future expansions of the system will support other gear types, age and length data, and marine mammal observations.
LAB: WH
CONTACT: PALMER, J.

NERO
Research Activities

NERO

Fishery Management Councils

Research Activities 1989

Research Summary

The following overview summarizes research projects being conducted by the Mid-Atlantic and New England Fishery Management Councils. These Councils are two of eight such Councils established by Congress to manage the nation's marine fishery resources within the U.S. Exclusive Economic Zone. Funding for research activities is administered by the National Marine Fisheries Service through the provisions of the Magnuson Fishery Conservation and Management Act of 1976, Public Law 94-265, as amended.

Contact: Harold C. Mears (508/281-9243)

1. Mid-Atlantic Fishery Management Council

Project title: **Surf Clam and Ocean Quahog FMP Monitoring Surveys**
Duration: July 1, 1987 - June 30, 1990
Funding: $24,000
Description: Conduct surveys of surf clam beds to gather data for monitoring the Surf Clam and Ocean Quahog Fishery Management Plan (FMP). Primary objectives are to: (1) determine whether specific areas should be closed to clamming as per the provisions of the FMP; (2) determine whether areas closed to clamming may be reopened; and (3) monitor reopened closed areas to determine the effects of fishing on the resource.

2. New England Fishery Management Council

Project title: **Fishing Industry Conservation Engineering Support Program**
Duration: September 1, 1987 - December 31, 1990
Funding: $400,000
Description: The Council is implementing a research program to facilitate the development of fishing gear for enhancing the achievement of the Council's management efforts for multispecies finfish and sea scallops. Contracts with individuals or organizations are negotiated for conduct of gear development projects that have been identified by the program coordinator and approved by the Council's Executive Committee.

Project title: **U.S./Canada Study and Enforcement/Compliance Study**
Duration: April 1, 1988 - March 31, 1990
Funding: $100,000
Description: Conduct scientific workshops related to transboundary fishery resources of common interest to the United States and Canada and evaluate basis for achieving and increasing industry compliance with Federal fishery regulations.

Project title: **Pilot Study of Fisheries Location Tracking and Communications Technology**
Duration: September 1, 1989 - December 31, 1989
Funding: $5,300
Description: Field test satellite-based tracking equipment to ascertain the practicality and acceptability of using this technology to improve the enforcement of fishery management measures such as time/area closures, landings windows, layover days, and quota restrictions.

NERO Habitat Conservation/ Protected Resources Research Activities

Data Coordination — **CONTACT: Colleen Coogan (508) 281-9291**

The Habitat Conservation Branch's Protected Species Program Collects information on species, size, sex, location, and date of pinniped strandings between Maine and Virginia for inclusion in a database. Information on sea turtle and cetacean strandings are received from databases maintained elsewhere and are used to coordinate stranding activities.

Marine Debris and Entanglement — **CONTACT: Thomas E. Bigford (508) 281-9209**

The Habitat Conservation Branch coordinates marine debris and entanglement activities in the Northeast. Branch staff represent research and management interests on the NMFS Ad Hoc Committee on Entanglement, which is part of the agency's Marine Entanglement Research Program. Branch staff also serve as co-organizers of the annual Coastweeks beach clean-ups that generate rudimentary information on types, quantities, and origins of marine litter.

Mitigation — **CONTACT: Thomas E. Bigford (508) 281-9209**

The Habitat Conservation Branch cooperates with other agencies involved in research to determine the feasibility of habitat mitigation techniques. In Chesapeake Bay, the Oxford Office works with the NMFS Southeast Fishery Center (Beaufort, NC Laboratory) to test the success of using dredged material as the base for oyster reefs and submerged aquatic vegetation beds. In Maine, the Branch is contemplating work with the Corps of Engineers to test the success of a clam flat established on dredged material.

NERO
Chesapeake Bay Stock Assessment
Research Activities 1989

Contact: Harold C. Mears (508) 281-9243

Research Summary

The following overview summarizes fisheries research projects approved during 1989 in response to the 1987 Chesapeake Bay Agreement signed by the Governors of Maryland, Pennsylvania, and Virginia, and the Mayor of the District of Columbia. The Agreement resulted in subsequent adoption, in July 1988, of a Chesapeake Bay Stock Assessment Plan for the assessment of commercially, recreationally and selected ecologically valuable species. Specifically, the Plan proposes improved means of assessing stocks of finfish and shellfish in Chesapeake Bay, and identifies outstanding data needs for stock assessment models for Bay fisheries. Funding for research activities is administered by the National Marine Fisheries Service through the broad provisions of the Fish and Wildlife Act of 1956.

1. Maryland

Project Title: **Chesapeake Bay Stock Assessment**
Duration: October 1, 1989 - September 30, 1990
Funding: $281,287 (Pending)
Description: Assess the status of the blue crab resource and associated fishery through a) a winter dredge survey to determine population abundance and forecast availability; b) a mark and recapture study to estimate growth/ mortality rates and describe spatial/temporal distribution; c) collection of biocharacteristic data via crab vessel and processing house sampling; and d) analysis of historical trawl survey data to assess bay-wide concordance and trends in abundance and size frequencies.

A second study will assess the natural and "repletion" populations of oysters in Chesapeake Bay. Project objectives are to develop a system for assessments of natural and "artificial" oyster stocks to aid in the management of the fishery and determining causes of population decline.

2. Old Dominion University

Project Title: **Chesapeake Bay Stock Assessment Program**
Duration: September 1, 1989 - December 31, 1990
Funding: $226,511
Description: Evaluate and develop specific recreational fishery survey methods for Chesapeake Bay and conduct a blue crab tag-recapture study to determine migratory patterns and fishery exploitation rates.

3. Virginia Institute of Marine Science

Project Title: **Chesapeake Bay Stock Assessment Program**
Duration: September 1, 1989 - August 31, 1990
Funding: $402,202
Description: Project activities include a) a field study of blue crab population dynamics as described under Maryland above; b) an evaluation of spatial/temporal sources of variation in nekton catch and the efficacy of stratified sampling used previously in the Chesapeake Bay; and c) improve Virginia's data management capabilities under the state's stock assessment program.

NERO
Saltonstall-Kennedy
Fisheries Development Program

Contact: Kenneth L. Beal (508) 281-9267

Background

The Saltonstall-Kennedy Act makes available to the Secretary of Commerce up to 30 percent of the gross receipts collected under the customs laws from duties on fishery products. The Secretary must use a portion of these funds each year to provide grants to persons carrying out research and development projects that address aspects of United States fisheries, including, but not limited to, harvesting, processing, and associated industries.

In FY 1989, about $4.4 million was available to fund new fisheries research and development projects. Of the 175 proposals received throughout the country, 48 new projects were approved. In the Northeast region, 9 projects were approved from the 43 proposals received. In addition, eight multi-year projects were continued for their second years, and cost amendments were approved increasing three projects. FY 1989 funding for these regional projects was $1.97 million.

Persons interested in applying for an S-K grant in the Northeast Region or desiring additional information may contact Kenneth Beal.

Summary of 1989 New Projects

Chemical Contaminants in Fish and Shellfish: Development of Uniform Testing and Reporting Standards - Yr 1 $245,265
CONTACT: Judith McDowell Capuzzo Woods Hole Oceanographic Institution

This project will: 1. Critically review analytical methods for the analysis of specific chemical contaminants, including the advantages and disadvantages of these methods from the perspective of requirements for protecting human health, protecting the viability of valuable fishery resources, and determining status and trends of chemical contamination; 2. Conduct a laboratory comparison of selected methods of analysis for a set of trace metal and organic contaminants in edible tissues of fish and shellfish and selected tissues known to be active sites for detoxification/biotransformation of contaminants from the same species; and 3. Conduct a voluntary intercomparison exercise among regional laboratories in New England, including government agency and contract laboratories.

Domestication and mass culture of summer flounder - YR 1 $143,292
CONTACT: Stewart Jacobson University of Massachusetts

The proposed research will be divided into four major components: controlled reproduction, including collection and conditioning of spawning stock; larval culture, including determination of nutritional requirements and development of cost effective artificial feeds; nursery culture of newly metamorphosed flounder, including engineering of heated seawater recycle culture systems to permit more rapid growth and culture year around; and grow-out culture to harvestable size, also including engineering of production systems and culture in sea cages. Each component will be conducted each year with new experimental series based on the previous year's results.

Factors Affecting the Selectivity of Trawls and the Survival of Codend Escapees - Yr 1 **$53,188**
CONTACT: Joseph DeAlteris University of Rhode Island

The objectives of the proposed project are to investigate the survival of codend escapees as related fish species and codend mesh opening, and to study water flow within and ahead of trawl nets as this is an important factor that affects the selectivity process.

The proposed project is the second phase of a continuing study. The first phase of the project has demonstrated significant differences in the survival of square and diamond mesh escapees for scup. Treated fish escaped sooner and survived better from square mesh than diamond mesh codends. Measurements of water flow in these codends indicate no difference suggesting that the fish are responding to the visual stimulus of mesh opening. Similar experiments on winter flounder and cod are continuing at present.

During the second phase of the project it is proposed to conduct additional experiments on the previously mentioned species and to include an additional species, butterfish. Additional data will ensure that the patterns observed in the preliminary data are real. The analysis of water flow within the codend will be extended into the mouth and body of the trawl. The purpose of these experiments will be to initially describe flow as a function of mesh size and twine diameter, and later to direct the flow within the net by changing the porosity of netting panels. This work is fundamental to the development of selective trawls.

A Coordinated Training Approach to Promote Public Confidence in Seafood - Yr 1 **$100,000**
CONTACT: Kerry R. Muse Mid-Atlantic Fisheries Development Foundation

The project is designed to educate the American consumer about safety and wholesomeness of seafood using educators, the media, and industry retail outlets. The providers of this information will be professional seafood marketing specialists, extension home economists, seafood home economists, and other professionals within the Mid-Atlantic region that have day-to-day contact with the region's consumer.

Since 1981, the Mid-Atlantic Fisheries Development Foundation has trained more than 75 such professionals in the area of seafood nutrition, seafood preparation, media relations, safety, handling, preparation, presentation, merchandizing, etc. The Foundation will take advantage of these trained individuals to help implement a new and updated program which will concern itself with seafood inspection, safety, environmental concern and governmental regulations that provide safeguards for the consumer. Training sessions will be held for the professionals; printed materials and videos regarding seafood training and education will be reviewed and updated as needed; media kits will be developed for food editors; and educational kits will be developed for seafood educators. Extension home economists will provide an intensive in-service workshop for other home economists in the region who will in return provide the consumers with a wealth of information. There will be additional activities in the area of seafood education, media awareness, a recipe data base, and trade show assistance. All activities will be coordinated by the Foundation office to avoid duplication of effort within the region.

Northeast Region Fishing Vessel Safety Training Program: Development of a Standard Curriculum - Yr 1 **$15,311**
CONTACT: Joseph DeAlteris University of Rhode Island

This project will develop a standardized curriculum for fishing vessel safety training. Activities within the region will be coordinated to maximize the utilization of equipment and facilities for the benefit of the fishing industry. Phase one of the project was designed to enhance the effectiveness of the safety training program at URI with new simulators, equipment and a training manual. Progress to date (15 May 89) on this project has been good. The proposed continuing project will develop a standardized curriculum for fishing vessel safety training at two levels; Intensive-experiential and short-awareness. This will be accomplished by the ad hoc Northeast Region Fishing Vessel Safety Committee in a series of meetings and communications over a two-year period. The recommendations of the Coast Guard and the National Transportation Safety Board will be incorporated into the final standardized curriculum.

WasteTreatment and Energy Recovery in Closed-Cycle Aquaculture Systems **$75,000**
CONTACT: Steven Van Gorder Fresh Culture Systems

A demonstration scale reactor treating fecal wastes from an aquaculture system will be operated and monitored for a period of one year. The purpose of the monitoring will be to establish the efficiency of this design for waste treatment and production of methane. The methane will be used to heat the water required in the aquaculture facility. A second stage treatment using fixed-film reactors will be designed, installed and monitored for a period of one year. This second stage will be evaluated with respect to production of methane from the first stage residual (the demonstration-scale reactor above) and treatment of the wastes sufficient to allow discharge to sewers in rural areas. Successful completion of the project will demonstrate significant cost advantages to medium-scale, year-round, indoor aquaculture.

Growth and Metabolism Energy Budget of Lake Sturgeon, *Ancipenser fulvescens*- Yr 1 **$50,000**
CONTACT: Paul W. Webb University of Michigan

Standard methods will be used to define the relationship between ration and growth for hatchery-size juvenile sturgeon. Maintenance ration and scope for growth will be measured. Appetite will be measured for a range of fish sizes. Standard metabolism will be determined in flow through respirometers, and routine metabolism will be measured for a range of fish sizes in mass respirometers. These data will be obtained at a range of temperatures typical of natural sturgeon habitat and in hatcheries. The data will be used to construct a model of energy flux, feeding, and growth for sturgeon. The model will be used to identify optimal culture practices for hatcheries raising sturgeon for stocking. The model, with comparisons with those for other species, will be used to recommend field management strategies.

Restore Consumer Confidence in Seafood - Yr 1 **$275,000**
CONTACT: Kenelm W. Coons New England Fisheries Development Association

This project will develop and implement a voluntary program tailored to the Northeast Region that upgrades seafood handling from the boats through storage and distribution to the public. This model certification program will be made available to participants as a marketing tool and will be used to rebuild confidence in East Coast seafood. The project will conduct actual temperature abuse studies, microbial and bacteriological in situ sampling, and conduct a survey of suppliers, handlers and users of seafood in the Northeast Region. A voluntary model program including vessel and plant certification and testing the use of sealed, dated packaging for high risk products will be adapted and implemented. An intensive education program that qualifies participants to be certified upon satisfactory completion of the education series will be undertaken. The industry will be assisted in implementing the HACCP program as part of this model program and integrate it with other federal, state, and voluntary industry quality assurance programs.

Comparable confidential "pre-post" temperature abuse and bacteriological/microbial measures will be repeated to measure the extent to which the educational and voluntary quality assurance program has created measurable improvements. These technical data will be linked with organoleptic measures of edibility and standard shelf life tests.

This project will update industry, regulatory and consumer groups on rapidly evolving research on seafood health risks and provide factual information about industry programs to eliminate seafood contamination and protect public health. Fourteen half-day workshops will be organized for retailers, wholesalers, distributors and end users, and media representatives, health care professionals and consumer educators.

The Significance of Domonic Acid DSP, and PSP in the Gulf of Maine: An issue of Economics and Public Safety - Yr 1 **$230,000**
CONTACT: Kenelm W. Coons — New England Fisheries Development Association

This project will advance our knowledge of toxins implicated recently in human health disorders that, in addition to consumer safety issues, pose an economic threat to the shellfish industry. Regarding domoic acid (DA), paralytic shellfish poisoning (PSP), and diarrhetic shellfish poisoning (DSP), the objectives of this project are: To monitor the Gulf of Maine and Nantucket Shoals for toxin presence and bloom evolution; to review recent developments in detection methodology and their appropriateness to the needs of industry; to investigate the dynamics of shellfish toxin uptake and removal by individual species; to transfer this technology and knowledge to industry to facilitate resource access and export of product; and finally to promote public confidence in the quality and wholesomeness of shellfish consumption by establishing the necessary protocol to prevent the introduction of contaminated product into the market.

1989 Saltonstall-Kennedy Fishery Development Projects Approved for Funding in the Northeast Region, NMFS

Chemical contaminants in fish and shellfish: development of uniform testing and reports standards *Woods Hole Oceanographic Institution*	$245,265
Domestication and mass culture of summer flounder *University of Massachusetts*	143,292
Factors affecting the selectivity of trawls and the survival of codend escapees *University of Rhode Island*	53,188
A coordinated training approach to promote public confidence in seafood Mid-Atlantic Fisheries Development Foundation	100,000
Northeast Region fishing vessel safety training program: development of a standard curriculum *University of Rhode Island*	15,311
Waste treatment and energy recovery in closed-cycle Aquaculture systems *Fresh Culture Systems*	75,000
Growth and metabolism energy budget of lake sturgeon, Acipenser fulvescens *University of Michigan*	50,000
Restore consumer confidence in seafood *New England Fisheries Development Association*	275,000
The significance of domoic acid, DSP, and PSP in the Gulf of Maine: an issue of economics and public safety *New England Fisheries Development Association*	230,000
Subtotal	**$1,187,056**
FY 1989 funding for eight multi-year projects approved last year	676,907
Cost amendments to three existing projects were also approved with increased FY 1989 funding of	103,555
Total	**$1,967,518**

NERO
1989 Grant-in-Aid Program

Contact: Harold C. Mears **(508) 281-9243**

During 1989, the NMFS Grant-In-Aid Program was authorized under two Acts:

1. **The Anadromous Fish Conservation Act of 1965 (Public Law 89-304 as amended):** Authorizes the Secretary of Commerce and the Secretary of Interior to enter into cooperative agreements with States and other non-Federal interests for the conservation, development, and enhancement of the anadromous fishery resources of the Nation and the fish in the Great Lakes and Lake Champlain that ascend streams to spawn, and for the control of the sea lamprey. The program is administered at the Federal level jointly by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. Federal funds up to 50 percent, 66-2/3 percent when two or more States cooperate, or 90% to carry out projects required by interstate fishery management plans, may be used to finance project costs. State fishery agencies, colleges, universities, private companies, and other non-Federal interests in 31 States bordering the oceans and the Great Lakes may participate under the Act. All projects must be coordinated with the State fishery agency concerned. The authorization for this Act was renewed in November, 1986 by Title IV of Public Law 99-659. This Act set authorized levels at $7,702,500 for fiscal year 1987, $7,920,000 for fiscal year 1988, and $8,152,500 for fiscal year 1989 for grants under the general provisions of Section 4. Section 7, the emergency research program to study striped bass populations and identify factors responsible for the current decline, was reauthorized for fiscal years 1989-1991 by Public Law 100-589.

2. **The Interjurisdictional Fisheries Act of 1986 (Title III of Public Law 99-659):** Establishes a formula-based financial assistance program, the purposes of which are (1) to promote and encourage State activities in support of the management of interjurisdictional fishery resources, and (2) to promote the management of interjurisdictional fishery resources throughout their range. Cost-sharing research projects are generally funded up to a 90 percent level of Federal participation, whereas projects for law enforcement and those to alleviate resource disasters, may be financed 100 percent with Federal funds. This legislation set authorized levels of $5,000,000 for each of fiscal years 1987, 1988, and 1989 for projects to carry out the purposes of the Act. In addition, $2,500,000 is authorized for each year to restore commercial fisheries disrupted by resource disasters arising from natural or undetermined causes.

Program Analysis

The following overview summarizes Grant-In-Aid Program projects in the NMFS Northeast Region during 1989. Included are project identification, principal investigator, and 1989 state and federal project segment costs.

P.L. 99-659
(Interjurisdictional Fisheries Act)

Connecticut Lobster (*Homarus americanus*) Population Recruitment Studies

Connecticut 3-IJ-4	Mark Blake	F- $ 20,000 S- $ 20,000

Continue biological investigations on American lobster in Long Island Sound. Sampling will be conducted to determine larval densities, juvenile/adult abundance, growth, and mortality rates. Study results will be used to forecast annual abundance of the adult, legal sized portion of the Long Island Sound lobster stock for resource management purposes.

Coastal Finfish Stock Assessment Survey

Delaware 3-IJ-27	Richard Cole	F- $ 19,185 S- $ 6,395

Determine trends in abundance of inshore fish stocks and establish a pre-recruitment index for selected species that will be integrated with coastwide data collected by the National Marine Fisheries Service and other state agencies. Data, to be used for resource management purposes, will be collected during a fall inshore bottom trawl survey designed to be compatible with similar fisheries investigations in other coastal regions.

Lobster Stock Assessment

Maine 3-IJ-33	Jay S. Krouse	F- $ 79,082 S- $ 79,083

Cnduct commercial fishing port and onboard sampling along the Maine coast in conjunction with complementary life history and gear selectivity studies. Sampling will be conducted to determine abundance indices from the catch/effort data, as well as recruitment, size, sex, occurrence, and distribution of the catch. The data will be used to assess the current status of the lobster resource in Maine for management purposes.

Transboundary Herring

Maine 3-IJ-34	Stanley Chenowith	F- $ 85,343 S- $ 85,344

Determine the small-scale distribution and abundance of Atlantic sea herring as related to hydrology, food, and predators. Collect and examine otoliths from larval and juvenile herring for characters that might indicate area of origin.

Development of Chesapeake Bay Oyster Management Strategy

Maryland 3-IJ-8	William A. Outten	Previously funded during 1988

Continue restoration efforts for the American oyster population in Chesapeake Bay that has been severely damaged by the disease organism MSX. Project activities will include planting oyster shells on natural oyster bars that will provide new substrate for spat set (larval attachment); and planting seed oysters to supplement natural spat set. This work is being undertaken to address "a commercial fishery failure due to a resource disaster."

Maryland Fisheries Statistics

Maryland 3-IJ-20	Connie Lewis	F- $ 84,027 S- $ 84,027

Maintain a comprehensive catch reporting and fishery monitoring system for use in management of interjurisdictional fishery resources within Maryland's portion of the Chesapeake Bay. Project activities will focus on providing fishery resource managers with information necessary to ascertain population status and to ensure proper management for these resources. An investigation of Maryland's pound net fishery will also be conducted to help assess the effects of increased fishing pressure upon the target species.

Massachusetts Fishery Resource Assessment

Massachusetts 3-IJ-3	Arnold Howe	F- $ 59,250 S- $207,000

To monitor distribution, relative abundance, size composition, and health of the commercial fishery resources in Massachusetts coastal waters through spring and autumn bottom trawl surveys. The project provides timely scientific information for managing marine fishery resources in state territorial waters.

Interjurisdictional Fisheries Management Support Program

Massachusetts 3-IJ-16	H. Arnold Carr	F- $ 73,340 S- $ 60,006

Provide services to the fishing and seafood industry by advising participants on fisheries management considerations/strategies, assessing constituent concerns on these issues, and informing resource managers of related, potential problems. Particular emphasis will be placed on gear research and technology to improve gear selectivity, addressing development of appropriate management measures and regulations for wise utilization and conservation of marine fishery resources.

Fisheries Statistics and Automated Data Processing

Massachusetts 3-IJ-29	Charles O. Anderson	F- $ 61,630 S- $108,036

Compile, through data analysis, all required catch reporting forms (harvest, value, and effort) submitted by Massachusetts commercial fishermen documenting their fishing activities on interjurisdictional fishery resources (such as lobster, alewives, striped bass.) Project activities will include improvement of processing capabilities to further enhance and increase reporting accuracy and timeliness of data submission for management use. As a participant in the Atlantic States Marine Fisheries Commission's Northeast Statistics Program, project results will be utilized to meet the requirements of state, interstate and Federal fisheries agencies responsible for the management of marine resources within internal waters and territorial seas of the individual states and the Exclusive Economic Zone.

Assessment of Whitefish Populations in the Treaty Area of Lake Michigan

Michigan 3-IJ-17	Philip Schneeberger	F- $ 19,185 S- $ 6,395

To monitor, through field sampling, age-size structure and biomass of landed whitefish in the Lake Michigan commercial trap net fishery. Results will be evaluated to ascertain population status and develop future whitefish management strategies between the states of Michigan, Wisconsin and the Chippewa/Ottawa Treaty Fishery Management Authority for this interjurisdictional species.

Lake Superior Commercial Fisheries Assessment Studies

Minnesota 3-IJ-12	Donald R. Schreiner	F- $ 19,185 S- $ 6,395

Ascertain and monitor the status of the lake trout and commercial fish stocks in the Minnesota waters of Lake Superior. Determine annual production and relative abundance indices and the degree of interaction between different types of fishing, including the sport and charter boat fishery. Age and growth data of commercial species will be collected, analyzed, and compared to historic data to note possible biological trends. Project data will aid management decisions relative to the harvest, stocking and rehabilitation of interjurisdictional fish stocks in Minnesota waters of Lake Superior.

Assessment of American Lobster (*Homarus americanus*) Nursery Potential in Great Bay Estuary

New Hampshire 3-IJ-22	John I. Nelson	F- $ 19,185 S- $ 6,395

Determine the distribution and abundance of lobster in coastal and estuarine waters of New Hampshire. Relationships between larval distribution and the possible use of estuaries as nursery grounds will be investigated. The data will be used to assess the current status of the lobster resource in New Hampshire waters for management purposes.

Interjurisdictional Fisheries Enforcement

New Jersey 3-IJ-13	Raymond Kirshner	F- $ 25,000 S- $ 2,778

To implement cooperative enforcement activities between the New Jersey Bureau of Law Enforcement and the National Marine Fisheries Service designed to support the management of interjurisdictional marine species, in the Exclusive Economic Zone (ocean waters between 3 and 200 miles) and state territorial waters. Investigative activities will include land, sea and air patrols to monitor the commercial and recreational harvesting and landing of striped bass, summer flounder, lobster and surf clams in support of state/federal resource management objectives.

Inventory of New Jersey's Surf Clam Resource

New Jersey 3-IJ-15	Thomas McCloy	F- $ 75,375 S- $ 8,375

To ascertain and monitor the surf clam resource in the coastal waters of New Jersey. An inventory designed to understand the population dynamics of the surf clam will be undertaken, to determine the relationships between the standing stock, the size distribution of surf clams within this stock, the settling patterns of juvenile surf clams, and associated mortality rates along the inshore coast of New Jersey. This information will assist both state and federal fisheries managers to ensure development and implementation of sound management practices for this valuable resource.

American Lobster Investigations

New York 3-IJ-11	Phillip T. Briggs	F- $ 54,763 S- $ 18,255

To determine, through sampling and tagging activities, biological population parameters and movement of American Lobsters in Long Island Sound. The data collected will be used to support the management of this interjurisdictional resource.

Determination of PCB Contaminant Levels in Lake Erie Commercial Fish Species

Ohio 3-IJ-21	Kenneth Paxton	F- $ 19,185 S- $ 6,395

Determine through biological sampling, PCB concentrations in carp and yellow perch harvested commercially from the Ohio waters of Lake Erie. Study results will identify possible relationships of PCB levels in fish by size, age, and geographical location. Data obtained will lead to improvements in quality control and provide a safer product for human consumption.

Interjurisdictional Fisheries Enforcement

Rhode Island 3-IJ-31	Ernest Wilkinson	F- $ 25,000 S- $ -0-

To implement cooperative enforcement activities between the Rhode Island Division of Enforcement and the National Marine Fisheries Service designed to support the management of interjurisdictional marine species, in the Exclusive Economic Zone (ocean waters between 3 and 200 miles) and state territorial waters. Investigative activities will include land, sea, and air patrols to monitor the commercial and recreational harvesting and landing of striped bass, tuna, and surf clams in support of state/federal resource management objectives.

Interjurisdictional Fisheries Management Support Program

Rhode Island 3-IJ-32	Richard Sisson	F- $ 41,085 S- $ 13,694

To provide research and administrative support to the Rhode Island Marine Fisheries Council to facilitate development and evaluation of interjurisdictional fisheries management measures. Proposed research activities include assessment of gear methodology, legal size limits, and seasonal/geographic harvest restrictions for Rhode Island's groundfish, striped bass, and lobster fisheries.

Coastal Fishery Resource Assessment

Rhode Island 3-IJ-35	Timothy R. Lynch	F- $ 37,548 S- $ 12,516

Conduct seasonal bottom trawl survey for the collection of fishery statistical data. Information gathered will augment previous resource assessment surveys and aid in the continued development of minimum biomass estimates for major commercial species by the state and NMFS stock assessment scientists. The estimates will aid in the intelligent management of the resources throughout their range.

Survival and Growth of Atlantic Salmon Fry Stocked in Varying Densities in the White River, VT

Vermont 3-IJ-19	George W. LaBar	F- $ 19,185 S- $ 6,395

Continue to assess survival and growth of Atlantic salmon fry stocked in varying densities in Vermont waters. Sections of each stocked area will be electrofished periodically to estimate population size and samples will be collected to determine growth rates. The information derived will assist managers in evaluating the effectiveness of the fry stocking program and provide needed data on optimum densities necessary to maximize Atlantic salmon production.

The Assessment of Commercial Fishing Effort in Virginia

Virginia 3-IJ-37	Joseph G. Loesch	F- $ 36,474 S- $ 12,162

Collect fishing effort data for pound nets and gillnets in Virginia's James, York, Rappahannock, and Potomac River commercial fisheries. Study results will provide information needed for the formulation of rational state management strategies for striped bass and shad/river herring. The project will also address management concerns stated in the interstate management plan for these species.

Commercial Fisheries Statistics Information Systems

Virginia 3-IJ-38	Lyle M. Varnell	F- $193,746 S- $ 64,578

Collect, process, analyze, and disseminate Virginia's commercial and recreational interjurisdictional fisheries catch/ effort data in support of fishery management activities. Analysis of this data will provide information necessary for determining effects of fishery management decisions and developing appropriate management strategies.

Ohio River Fisheries Information System

West Virginia 3-IJ-36	M. Delbert Lobb	F- $ 19,185 S- $ 6,395

Collect, analyze, and enter diverse biological and environmental fisheries research information into a computerized map database that affects the West Virginia portion of the Ohio River. Project activities will focus on the input of such data and refining the associated output (for example, reports in the form of tables, graphs, and maps correlating important riverine features with known concentrations of fish) for multi-agency analyses of Ohio River fisheries management concerns.

Great Lakes Fisheries Statistics Information System

Wisconsin 3-IJ-23	To be named	F- $ 38,370 S- $ 12,790

Improve, through centralization of all license and permit activities, the collection and analysis of harvest data for both sport and commercial (chub yellow perch) fisheries conducted within Lake Michigan and Lake Superior. These improvements will enable the streamlining of commercial catch reporting and licensing systems for efficient implementation of limited entry and quota harvest regulatory measures.

Interstate Fisheries Management Program

ASMFC 3-IJ-2	Paul Perra	F - $109,440 S- $ -0-

Continue cooperative interstate management of shared territorial sea fisheries of the Atlantic coast through the development and monitoring of fishery management plans. Efforts during 1989 are directed toward research and management needs for the striped bass, northern shrimp, Atlantic sturgeon, and Atlantic herring coastal resources.

Research and Data Analysis Supporting Interstate Management of Shad and River Herring

ASMFC/PA 3-IJ-28	Paul Perra	F- $ 19,185 S- $ 6,395

Continue activities to monitor territorial sea fisheries for American shad and river herring conducted along the eastern seaboard, and review/coordinate anadromous alosid research studies in compliance with management activities outlined in the Interstate Management Plan.

P.L. 89-304
(Anadromous Fish Conservation Act)

Population Dynamics of American Shad in Connecticut

Connecticut AFC-17	Thomas Savoy	F- $45,000 S- $45,000

To monitor, through field sampling, relative abundance / fluctuations in population size of American shad in the Connecticut River watershed. Also, to survey sport and commercial harvest of American shad in the Thames and Connecticut Rivers. Results will directly contribute to research and information needs identified in the Interstate Fishery Management Plan for this species.

Shortnose Sturgeon Status in Connecticut

Connecticut AFC-18	Thomas Savoy	F- $ 27,000 S- $ 27,000

Continue monitoring activities to determine present population levels and movements of shortnose sturgeon in the Connecticut and Thames Rivers. Biological sampling will include gillnetting, trawling, scuba surveys and marking/fin clipping experiments. The study will provide information necessary to promulgate effective regulations and minimize negative environmental impacts to protect and conserve this endangered species.

Androscoggin River Anadromous Fish Enhancement

Maine AFC-28	Lew Flagg	F- $ 50,000 S- $ 50,000

To determine through field sampling, the timing/magnitude/sex composition/growth rates of anadromous alosids (American shad and alewife) in the Androscoggin River Basin. Also, restore anadromous fish runs through stocking (transplant) of prespawner adults to suitable spawning areas.

Maryland Striped Bass Hooking Mortality Study

Maryland AFC-18	Eric B. May	F- $ 15,000 S- $ 11,250

To evaluate through field activities hook/release mortality rates of striped bass. Project studies will include examining the effects of salinity on hooking mortality, and the relationships between mortality rates and fish size. Data derived from this study will directly contribute to information/research needs identified in the Interstate Management Plan for this species.

Anadromous Fish Restoration in Big Elk Creek

Maryland AFC-19	C. J. O'Dell	F- $ 45,000 S- $ 45,000

To restore healthy spawning populations of American shad and river herring in Big Elk Creek at the head of Chesapeake Bay. The approach will incorporate trapping of adult prespawning fish and transplanting in the target area, rearing, and release of imprinted juveniles, and construction of a fish ladder to allow access to additional spawning habitat.

Anadromous Fisheries Management

Massachusetts AFC-21	Joseph DiCarlo	F- $ 69,000 S- $ 69,000

Maintain and enhance anadromous fish runs and fish passage facilities. Adult shad and herring will be transplanted into selected rivers to restore spawning stock viability. An Atlantic shortnose sturgeon survey will be conducted to investigate the distribution, movement and feeding grounds of sturgeon populating the Merrimack River System.

Hook and Release Mortality of Striped Bass

Massachusetts AFC-22 Previously funded during 1988	Paul Diodati	

To evaluate hook/release mortality rates of striped bass. Data derived from this study will directly contribute to information needs identified in the Interstate Management Plan for this species.

Evaluation of Anadromous Fish Gilling Mortality in Large Mesh Gillnets in an Exploratory Commercial Fishery for Siscowet Trout in Lake Superior

Michigan AFC-16	Richard Schorfhaar	F- $ 15,000 S- $ 15,000

Determine the immediate and long term effect of Michigan's Lake Superior exploratory commercial siscowet lake trout fishery upon resident fish populations. Project activities will include monitoring of incidental catch rates in large mesh gill nets and predation investigations. Project results will provide fishery resource managers with valuable data to make important decisions regarding future siscowet harvest.

New Jersey Striped Bass Tagging Program

New Jersey AFC-12	Peter J. Himchak	F- $ 20,000 S- $ 2,222

Ascertain and monitor the movements and distribution of striped bass found within New Jersey's portion of Delaware Bay through implementation of a coastwide tagging survey. This study will provide information necessary to determine striped bass exploitation rates for interstate resource management analyses.

A Study of the Striped Bass in the Marine District of New York State IV

New York AFC-14	Byron H. Young	F- $230,000 S- $ 25,556

Continue collection of biocharacteristic data for New York's striped bass population through sampling of coastal commercial and recreational catch, and assessment of striped bass spawning success in the Hudson River. Project activities also include a sampling and tagging investigation of striped bass captured by haul seine during the fall off Eastern Long Island.

Striped Bass Research, Virginia: Characterization of the Striped Bass Population in the Rappahannock River

Virginia AFC-18	Joseph G. Loesch	F- $ 60,000 S- $ 20,929

Continue characterization, through field sampling, of the adult striped bass population in Virginia's Rappahannock River by sex, age, length, and weight in fall 1988 and spring 1989. The proposed research is directly related to priorities identified in the Action Plan for the Emergency Striped Bass Study.

A Mark Recapture Study of Striped Bass in the James River, Virginia

Virginia AFC-19	Joseph G. Loesch	F- $ 50,000 S- $ 14,609

Continue tag and release activities of striped bass in the James River to evaluate migratory behavior and fishery exploitation rates. Scale samples and length measurements will be taken for aging analyses. Results will contribute to research needs identified in the Interstate Fishery Management Plan for the striped bass.

A Study of *Alosa* Stock Composition and Year-Class Strength in Virginia

Virginia AFC-20	Joseph G. Loesch	F- $ 48,000 S- $ 48,000

Collect harvest and biological data for analysis of alosid (alewife, American shad and blueback herring) populations in Virginia coastal waters and evaluate annual relative abundance, growth, and mortality of juvenile alosid stocks.

Assessment of Alewife and Rainbow Smelt Populations and the Trawl Fishery in Lake Michigan

Wisconsin AFC-17	To be named.	F- $ 45,000 S- $ 45,000

Develop and conduct an acoustic sampling program to assess the abundance of alewives and rainbow smelt in the Wisconsin waters of Lake Michigan and Green Bay. Data will be collected with echo sounders and recorded digitally on a video cassette recorder. The commercial trawl fishery will be monitored to determine total harvest and effort statistics. The project will provide managers with the information necessary to monitor the status and regulate the harvest of these commercially important forage species.

Re-evaluation of Interstate Striped Bass Conservation and Management Planning Activities

ASMFC AFC-2	Paul Perra	Previously funded

Conduct additional ASMFC Committee meetings for the completion of the new ASMFC Interstate Management Plan for Striped Bass.

Emergency Striped Bass Study Workshops

ASMFC AFC-3	Paul Perra	Previously funded

Organize, conduct, and prepare draft proceedings of workshops addressing research findings relative to program accomplishments under the Emergency Striped Bass Study (Section 7 of Public Law 89-304).